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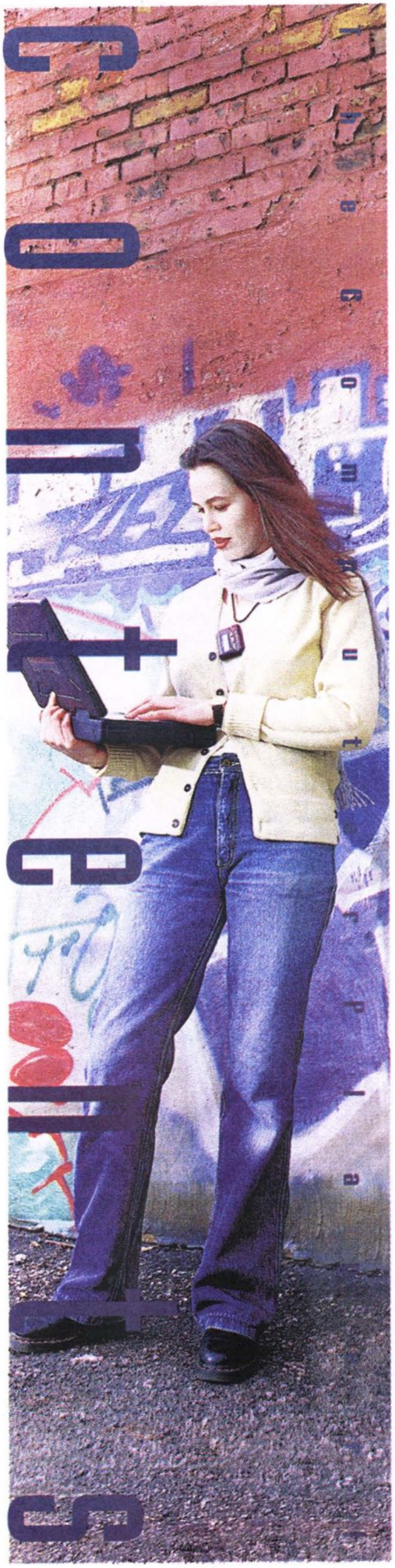

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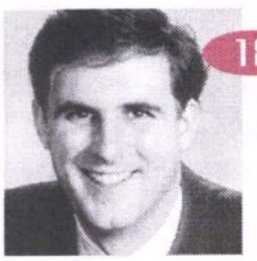
14

Resumes & the Internet: A pairing with potential



18

Guest columnist Jim Harris: Facing a fast, fluctuating future

21

The freedom to work all the time

17 A few words on the future of work

21 Overcoming barriers to learining

24 Y2K specialists: A sellers market

48 Book review: *Get Wired, You're Hired: The Canadian Guide to Job Hunting Online*

news · reviews · columns · online

features

10 Gadgets and doodads for your computer

32 TongueInCheek speaks to the future

32 BrainWaves makes waves

35 Virus hoaxes: Never-ending stories?

35 New *Star Wars* toy stuns the market

news

8 Virtual Castelgar: The first Web site of its kind in BC

9 Electronic snooping the subject of town-hall meeting

25 Bugs aplenty for Microsoft *Explorer*

28 Feds introduce cyber-friendly budget

29 Mac clones proliferating

45 Briefs

software/hardware

36 Operating systems: A head-to-head comparison

43 Adobe Photoshop, a joy year round

43 Photoshop plug-ins add fun

43 WordPerfect for Mac

50 Slim notebook can bulk up as needed

Profile

33 Happy 20th to BC's Basic'ly BBS

multimedia

52 Understanding the stock market

53 A musician's treasure trove

55 All things Canadian on CD-ROM

columns

27 Street Buzz: Thieves let their fingers do the walking

27 Softwary: The persistance of DOS

56 101: Updating your software

57 New Business: Conducting business on the World Wide Web

58 OS/2 Ready: The fix is in

59 Mac Rant: Gil's big shoe

60 Power Learning: Students need real-life skills

games

69 Downloadable diversions

72 *Tomb Raiders* of the lost ark

73 Megalomaniacs rejoice!

73 Game contest winner!

online

66 Computer theft skyrockets

67 Roadmap Part 3: The usenet and its newsgroups

68 Hewl sites

reader services

6 Letters

26 *CP!* Calendar of Events

65 You Asked Us

61 Marketplace

62 Chinese section

74 Advertisers' Index

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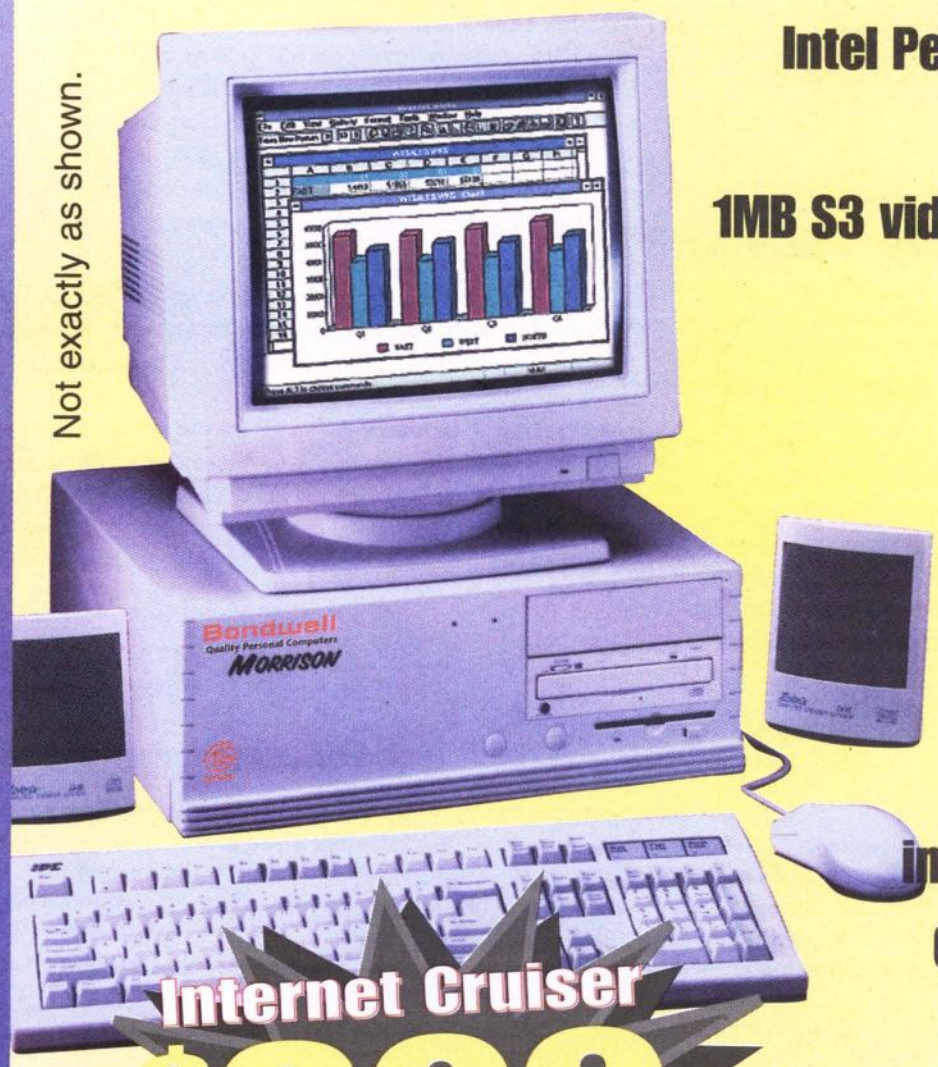

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Upgrading:

It's not just for machines anymore

letter from the editor

A while back, while I was taking a *Quark XPress* desktop-publishing course at a computer resource centre, I started talking to the other people gathered for skills upgrading.

One man in his sixties had spent many years doing what he knew best at a can-labelling plant. Now, all of a sudden, he had to learn how to produce the labels himself—digitally. Although he was only a few short years away from retirement, it was either learn now, or leave immediately.

Another woman was there to master *Excel*. Although she already excelled in pencil and paper accounting, this was no longer acceptable; she had to learn how to use a mouse.

A young woman in her twenties had arrived to learn about Web authoring. She was up on the WWW craze and wanted in.

Another gentleman just wanted to learn about the Internet. Everywhere he turned, people were telling him to research the Net...and he had no idea what to do!

It seems that no matter what age you are, or what you do, technology is being upgraded—and you're being asked to upgrade along with it. Think you know everything you need to know? Perhaps, but to survive into tomorrow you'll need to know more—and you'll probably need to know things you never even dreamed of knowing today.

Danger, Will Robinson!

Everywhere you turn, book jackets point out this same phenomenon: *The End of Work; Surviving the Information Age; The Learning Paradox; Survivability; Get Wired, You're Hired.* They're all warning us about the radical shifts going on in the employment field, and the necessary alterations in perception and adaptation we must make.

In this issue of *The Computer Player!* we take a look at various angles of this late twentieth-century phenomenon. How do you prepare a resume that will work on the Internet? How do you search for work on the Web? What are the hot jobs in the technology field? How do you adapt to change? Can you have a career and not a job?

Although various factors contribute to Canada's bleak job environment (unemployment, longer hours for less money, zero job security), technology "is one of the most central variables. It's transforming workplaces, it's changing the nature of work," says a recent report by Canadian Policy Research Networks.

So how do you use technological change to your advantage?

Plug in—or else!

"I have a simple premise," writes Jim Carroll, author of the soon-to-be released *Surviving the Information Age*. "A good survival skill for any baby boomer, intent on keeping his job or in establishing opportunities in the wild new 'wired economy,' is to be a master of the wired world...

"If you remain 'unplugged,' you'll be operating at a tremendous disadvantage compared to those who are 'plugged in.' In fact, those who are 'wired' will have the good jobs, and those who are not will suffer as the future marches on."

Jeremy Rifkin, author of the immensely popular *The End of Work*, agreed that "we are on the cusp of a great transition in the nature of commerce and work. We are moving out of the industrial age and into the information age. Sophisticated computers, telecommunications technology, robots, other intelligent machines are replacing traditional job categories."

But is this a bad thing? "I chose to see this as one of the great opportunities for the human race," Rifkin stated. Everyone from architects to lawyers is using technology to speed performance. That's opportunity.

And finally Jim Harris, author of *The Learning Paradox*, believes flexibility is the way to security. "What will create security? Only three things: our ability to learn; our ability to change; and our ability to accept uncertainty," writes Harris. "And what do we fear most as adults? Learning, changing, and accepting uncertainty. I call it the learning paradox—our security is based on what we fear most."

Silver lining in cyberspace?

Although each of us can identify one person who has recently lost a job, and another who is struggling to adapt to new technologies, there are probably also others we can point to whose lives have improved because of technological change, be it through telecommuting, the Web, or a simple electronic spreadsheet.

Although keeping current takes a lot of time and effort, it certainly pays off: just ask the experts! How many of us would be willing to give up our computers and revert to pens and pencils? No one. This new world is too exciting—and the possibilities are endless.

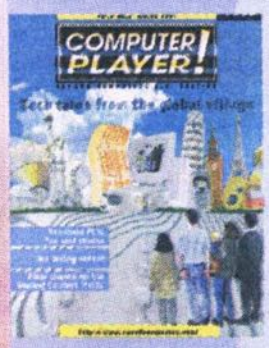
Enjoy the issue!

Māra Gulens, Editor in Chief

editor@tcpon.com ♦

Your letters please

Letters on issues raised in the paper or general computer topics are welcome.
Please be brief.
We regret that we are unable to look up stories from past issues, suggest products, or solve all your computer problems.
Only those with names and e-mail or snail-mail addresses will be published.
Letters may be edited for space or content.



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Time check

I read the March 1997 article by Chris Guly ("PC as appliance") and note Jeff Dossett's statement that "We absolutely foresee the time when the personal computer in its various forms...will achieve 90 per cent penetration rate." I don't doubt it, but I wonder if anybody has some time projections on achieving that 90 per cent?

Franklin Wayne Poley, via the Internet

Living with bugs

I am writing in response to Alan Zisman's article entitled "In software as in flour, how many bugs are too many?" (March 1997)

If software were cars, would I walk to school?

Sure, there's too many bugs in the software that we use, but there are no alternatives. We don't want to say "I think I'll just walk," when it comes to software because walking is slow. I'd rather use a word processor to do a school asignment and work around the bugs than twice as much time "doing it by hand."

We are a long way away from the time when most software is bug-free, but software has only been around for the past two decades. I think that if you look back, most, if not all, of the early cars had some bugs in them, too. The difference is that those cars didn't have programmers.

As for me, I take the car to school.

Albert Ulanday, via the Internet

• •

Your articles on bugs really hit a sore point with me. I bought Corel's *Print House* around Christmas and paid only $19.95. The program works fine on screen, but the printouts have so many bugs that it turned the creating of new stuff into a very unpleasant experience.

There are two versions of *Print House*, one at $19.95 and one at $49.95. Looking at the boxes, I could not see any difference (5,000 free clip-art images and so on). The difference, from what I can see now, is that one has bugs and the other does not.

I got on their Usenet group and saw that quite a few had the same problem, and then they took it off their bulletin board: the next morning, all those messages indicating that maybe everything was not rosy with their stuff were gone. Bravo for keeping the bugs under the carpet.

Good article, Alan!

Gilles A. Marchessault, via the Internet

Speed issues

Paul Angyal, in his article on chips in the March 1997 issue, seems to think that Intel CPUs are unquestionably the fastest currently available for the desktop: "Intel undoubtedly has the fastest turboprop."

Undoubtedly? With Silicon Graphic's O2 model coming in at high-end "turboprop" prices, and with the PowerPC 604e chip running at 225 MHz in Macs and Mac clones, there's already been plenty of room for doubt. Mr. Angyal and his readers might usefully direct their attention to the English version of a recent, technically thorough (and rather boring) article in the German computer journal "C't", in which Intel's efforts are put into perspective in a comparitive test of Pentium, Pentium Pro, and PowerPC chips in various platforms.

The picture, even before the recent arrival of PowerPC chips running in the

continued on page 7

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ABOUT THE COVER
This month's cover photograph was shot by John Narvali and features Sandra Hardy using a Panasonic CF-25 laptop and a Motorola Ultra Express numeric pager. It was designed & retouched in *Photoshop 3.0.* by Jennifer Hanlon Scott. Composition & type were created in *Adobe Illustrator 6.0.*

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Letters ...

continued from page 6

300-533 MHz "jet" speed range, wasn't nearly as clear as Mr. Angyal seems to think: "C't" concludes that "Even if there isn't a clear winner, you can certainly make out a loser..." I was a little surprised to find out who this loser turned out to be! Hint: it might have to do with the slowness of a widely-marketed operating system.

Now, there's where the word "undoubtedly" might realistically be employed.

B. Bennett, via the Internet

Looks as if I touched a raw nerve with the turboprop vs. jet analogy, and some readers think that a turboprop is faster than a jet. It isn't, and it will never do Mach 2 (twice the speed of the sound).

Paul Angyal ◆

Oops!

Unfortunately, we published an incorrect number for Icicle Computer in our annual review (March) of tax-prep software. To contact Icicle, go to http://www.hookup.net/~icicle/ or phone (613)237-4899.

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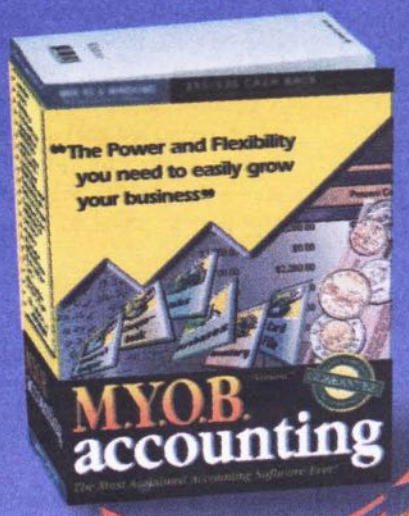

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Virtual village

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The splash page proudly proclaims "We went online at 11:20 AM Friday, September 6, 1996."

Virtual Castelgar is believed to be the first Web site of its kind in BC, and may have been among the first of its kind in the world. It's a virtual community mirroring the village of Castelgar (population: 7,000), which nestles in the Kootenay Mountains east of Vancouver.

The site includes, among other things, local government, a calendar of events, sports, recreation, educational institutions, industry, a mall of businesses, weather information, a map, pictures of the area, a real-time chat feature, and a message board. A surprisingly elegant offering by the Castelgar RCMP Detachment completes the picture.

Conceived by Richard Maddocks, executive director of the Castlegar & District Development Board, and Loukianow Miller Internet Specialists, this growing, evolving project has measurable goals and objectives and will be evaluated accordingly.

Fair exchange

Maddocks reports that "we undertook this venture as an economic development project. Our unofficial motto was to 'take Castelgar to the world and bring the world to Castelgar.'

"We secured private investment from corporate sponsors and hired local Web writers and worked closely with our local ISP."

There are many good Web sites out there. What makes this one unique lies in its content and its developmental process. Virtual Castelgar isn't about technology; it's about a community working together to promote itself, both locally and globally.

The $10,000 project couldn't have happened without the support of its major corporate sponsors (Castlegar Savings Credit Union, BC Hydro, and Celgar Pulpmill), as well as the support and donations of time or money from many others. According to Project Co-ordinator Leslie Loukianow, of Loukianow Miller Internet Specialists, "it takes a whole bunch of different Web writers, people, donations, sponsorships, etc... I get to run around and find the information, funding and sites to go in. Not to mention sometimes selling the idea to chambers, etc., so they can support it.

"I don't know how many times we've struggled making the Cities as 'human' as we can. I just want them to have a personality, for people to actually get a physical response, you know?"

Pulling together

Virtual Castelgar is a triumph of cooperation and organization—a stellar example of what a small community can accomplish when people pull together. Marilyn Strong of The Strong Communication Group Inc. probably speaks for many when she says "I'm so proud of our little community and what it's achieved." ◆

info box

Virtual Castelgar
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Richard Maddocks
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Electronic snooping the subject of town-hall meeting

• • By JUNE CAMPBELL • •

We must have regulations to protect our privacy in the face of emerging new technologies, and those regulations must be based on a human-rights approach. This is the message given to the Standing Committee on Human Rights and the Status of Persons with Disabilities at a town hall meeting held on March 10 in Vancouver.

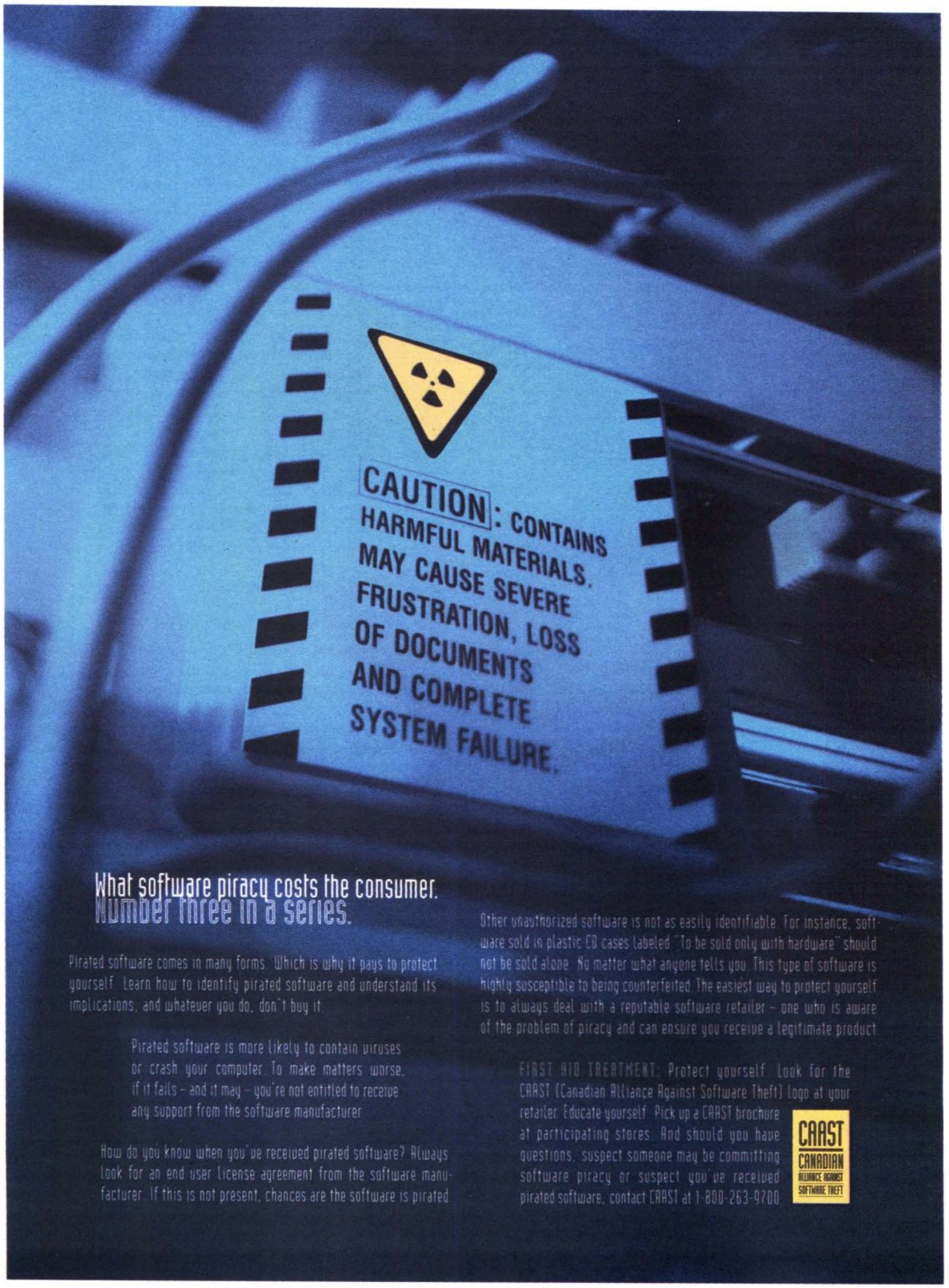
Representatives from privacy associations, education, law, health, industry, and the public sector met with Committee members to discuss the impact of new technologies on our right to privacy. Chaired by The Honourable Sheila Finestone, MP, the Parliamentary Committee is visiting selected points across Canada to invite dialogue on the following technologies:

1. Smart cards, (not to be confused with the magnetic stripe cards used for credit cards) have the potential to be adopted for personal-identification purposes. Housing a microprocessor and memory-storage space, they are essentially a personal computer with the shape, size, and appearance of a credit card. They can calculate, encrypt, and record data, and can interface with computer networks and centralised databases. Smart cards have the capability of maintaining any and all data about an individual, and of updating the centralized data bank of information every time the card is used. Theoretically, these cards can contain the most exhaustive database of information about the individual that has ever assembled.

2. Genetic testing has the potential to change the fortunes of various institutions and businesses. As the cost of genetic testing lowers, its potential for use by the private sector increases. Currently used as forensic evidence in criminal investigations, genetic information is of considerable interest to health-care providers, insurance companies, and employers. Insurance companies, for instance, could refuse coverage to individuals who are genetically predisposed to disease; employers may screen out potential employees whose genetic make-up predisposes them to health problems.

3. Video-monitoring technologies have given rise to a whole new set of privacy issues. Modern technologies now have the ability to penetrate walls, function in the dark, and operate from great distances, and can be aggregated with other sources of information. Computerized facial-recognition systems can take the videotaped image of a face and match it with a database of facial images. Supposedly a database of images, such as the registered drivers in BC, could be matched against tapings from a closed-circuit television system to identify anyone, anywhere.

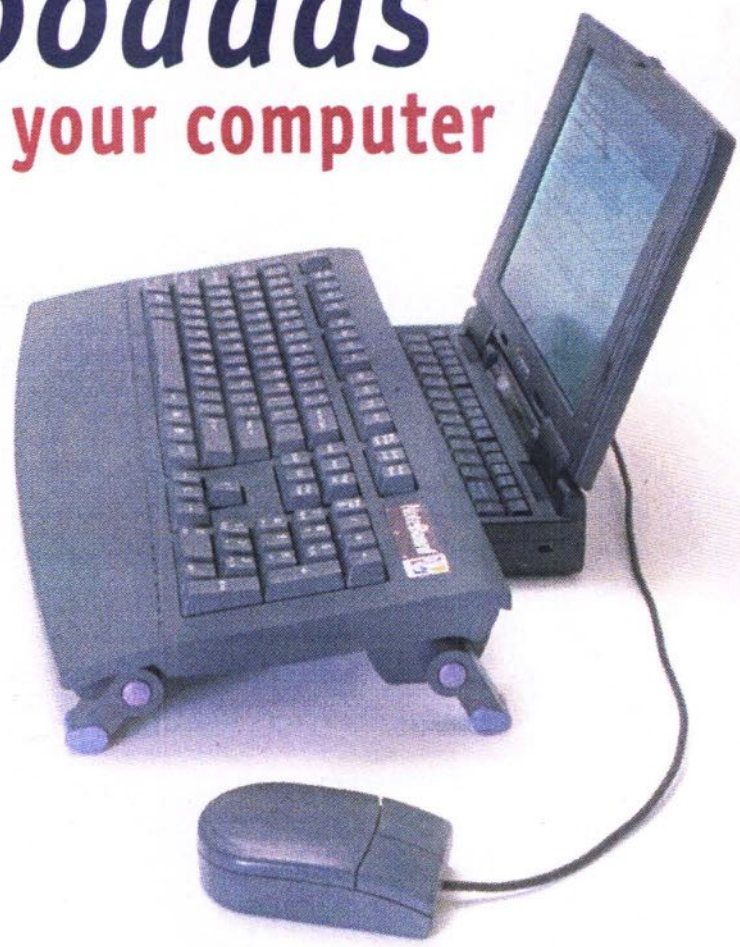
The town hall discussions were lead by local experts in the field of privacy and technology (Darrel Evans, executive director of the BC Freedom of Information and Privacy Association; Colin Bennett, Political Science, University of Victoria; Lorrainne Dixon, director of the Office of Information and Privacy Commissioner; and Richard Rosenberg, Department of Computer Science, UBC). ◆



Cover

Gadgets and doodads for your computer

By LYNN GREINER



A computer is a lovely toy, but many of the things that make it fit to use are the bits and pieces we add later. Some are expensive, and some are just clever little aggravation preventers. We chose a litter of them, just for you.

The Felix sensitive mouse

The criteria was fairly simple: the item had to be a computer accessory or add-on that somehow makes a computer nicer to use. If a product type isn't here, chances are you'll see an in-depth feature in the not-too-distant future.

We picked up some neat pointing devices, some unusual keyboards, and a new twist on computer cases (you'll see). And we'll throw in a couple of cheap tricks that, when you see them, you'll wonder why no one has thought of them before. So, without futher ado...

Sensitive cat, er, mouse

Felix, from Altra, is an unusual pointing device. It's not exactly a mouse, but rather a self-contained electro-optical contraption roughly six inches "square," with a one-inch square mousing surface in the middle. The permanently attached pointing thingy (Altra calls it the handle) has little ears on the side that make it easy to grip and move around with very little hand and wrist movement. You can span the whole screen (even a large one) by moving the handle across its one-inch pad.

I did find that, after rebooting my Windows 95 system, I'd have to "teach" Felix the size of my screen by moving the pointer back and forth from side to side, and top to bottom, a couple of times. Aside from that, and some wild and wonderful driver problems (solved by downloading the latest and greatest from Altra's Web site), the device copes well with a 17-inch monitor.

Felix is a three-button beast, and the middle button can be programmed. Because the device is quite sensitive, and a tiny movement can translate into quite a jiggle (Felix has 640 dpi resolution), I quickly decided to program the middle button to double-click when pressed. This worked well, although the shaky of hand may prefer a less sensitive pointing device.

The unit uses Microsoft mouse drivers (including Windows 95), or you can install the special Altra versions.

Smart rodent

Microsoft IntelliMouse looks like a Microsoft Mouse with a little wheel in the middle, between the two buttons. The wheel, which is also a button, can do some really clever tricks under Windows 95 or Windows NT, within applications that know about it (anywhere else, it's just a two-button mouse). That list is rather short, thus far, but in *Office 97* programs, for example, if you turn the wheel the display scrolls as though you'd clicked in the scroll bar.

The IntelliPoint software lets you program the wheel button to double-click, start Help, switch to the Shell, or open the Start menu, and you can set the actions performed when you rotate the wheel (scroll a whole screen forward with a one notch movement, for example). There's an odometer that tracks how far you've moused, and an option that snaps the mouse cursor to the default button in any dialogue. Another option lets you activate a window by simply moving the cursor into it. All of these options, and more, are part of the newest version of IntelliPoint software; only the wheel settings are unique to IntelliMouse.

Aside from these goodies, IntelliMouse is just a normal high-end Microsoft Mouse. It will come into its own once more software supports the wheel.

Going, going...

I'm being bad, mentioning the MousePen from Fellowes, because my contact in the Canadian office (an enthusiastic user of the product) tells me the company plans to discontinue it. But it's such a good pointing device that I can't resist—maybe if enough consumers yell, they'll change their minds. The corded version is considerably cheaper, and is very easy on the hands and wrists, since you hold it like a pen. The pea-sized ball is virtually unstoppable.

Now let's move from pointing devices to typing devices.

The Noteboard

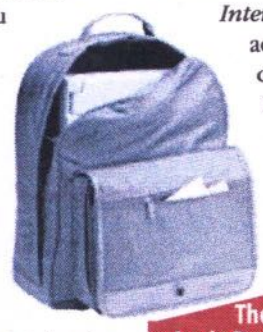
Keyboard evolution

The NoteBoard, from Darwin Keyboards, is designed for users of notebook computers who prefer to type on a full-sized keyboard. Unlike most external keyboards, though, this one has four six-position adjustable feet that lift it a good couple of inches off the desk, so it can straddle the notebook computer instead of having to be placed in front of it. The feet lock into place, and are sturdy enough to keep the keyboard perfectly stable, even under the heaviest hands. Their rubberized bottoms prevent slipping.

The keyboard itself is an elegant charcoal grey, and may be purchased with or without a matching serial mouse. It has a wide palmrest, and a full complement of keys, including 12 function keys, Windows 95 keys, and separate cursor control keys. The touch is relatively light, and you can hear when a key makes contact, despite the absence of keyclicks.

The Compaq Scanner Keyboard

The NoteBoard comes with LaunchPad software, which lets you program the function keys to launch programs (my F12 now starts Solitaire), or even provide one-touch access to your favourite Web site from *Netscape*, *Internet Explorer*, or America Online. LaunchPad actually works with most keyboards, and you can download an evaluation copy from Darwin's Web site.



The Case Logic Day Pack

Back to nature

The Microsoft Natural Keyboard is Microsoft's ergonomic model, a curvaceous device that is raised in the middle, effectively splitting the keyboard in two and placing the keys in a slight V shape. The idea is that each hand will rest on its home keys, at a more natural angle than on a normal, flat keyboard. The numeric keypad and cursor control keys are on the flat end of the unit; only the "typing" keys are on a slant.

The Natural Keyboard has a single full-width foot that raises the front of the unit a good inch and a half. A

continued on page 12

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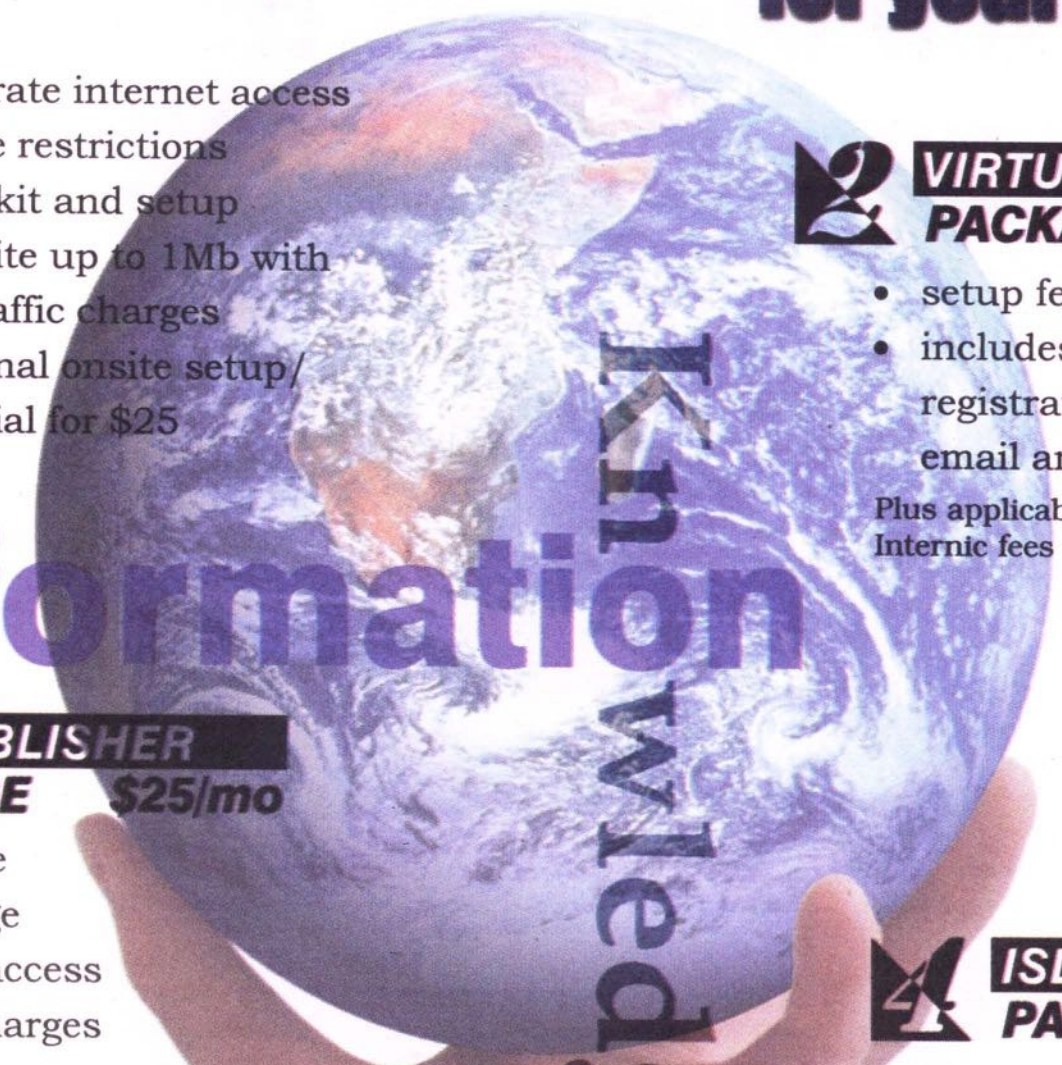

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Gadgets and doodads for your ...

continued from page 10

palmrest allows you to lay your hands more or less flat on it while you're typing.

Most users who try this thing curse it for the first little while, especially if they're not touch-typists. If you tend to cross over and hit, say, the "T" key with your right hand instead of the "correct" left hand, you'll find it extremely awkward. And typing at an angle takes getting used to. After a while, however, you notice your wrists don't feel as abused after a long keying session, and a normal keyboard feels strange.

A keyboard that can see

Compaq's Scanner Keyboard has a TWAIN-compliant Visioneer PaperPort monochrome (up to 256 grey-scale) scanner built right into it. You just drop your correspondence or whatever into a slot at the back of the keyboard, and it turns itself on and automatically slurps the paper through. It's great for clippings or business cards, as well.

The keyboard comes with PaperPort software that lets you manage and manipulate the graphic images you scan, as well as a light version of Xerox TextBridge OCR (optical character recognition) that can translate most plain letters into word-processing formats, but has difficulty with things like multiple columns. For that complexity, the program suggests you upgrade to the full version of TextBridge.

A special case

You may wonder what could be special about a computer case. Well, Case Logic has actually developed a new twist with its Day Pack, a backpack designed for notebook computers. It has a padded pouch at the back, with a Velcro strap to secure it, that's just the right size for all but the hugest notebook computers. Even with the machine in place, there's lots of space in the pack for other bits and pieces.

A pouch on the front can hold flat items, like small manuals, and it unfastens and flips up to reveal more pockets for pens, diskettes, and other small items. The promotional material says one pocket is for cellular phones, but it'll only hold the tiniest models.

I wandered around wearing a computer-laden Day Pack, and although the computer bumped my back a bit, it was not uncomfortable. This pack would work well for students, or for business people who don't mind putting dignity aside to give their aching shoulders a rest.

A few looney items

Now for some small stuff. If you're a Looney Toons fan, Fellowes has a full line of wrist rests and mouse pads decorated with characters like the Tasmanian Devil, Bugs Bunny, and Marvin the Martian, for between $10 and $20. If your CD-ROM collection is getting out of hand, you might want to swap the bulky jewel cases for plastic sleeves, and put them in Case Logic's special 50 disk capacity CD-ROM shuttle (PDR-50, $29.99).

Finally, with today's more powerful machines, reasonably good power is a must, so a decent surge-suppressing power bar is a great investment if you can't afford a UPS (uninterruptable power supply). One good choice is the Tripp Lite ISOBar surge suppressor. They cost about $65 and up, depending on the number of outlets ($80, with phone line protection as well), and will eat power surges before they hit your computer. They come with $10,000 or $25,000 equipment insurance (depending on the model); if anything gets fried by a power surge while plugged in to an ISOBar, you'll be compensated. ◆

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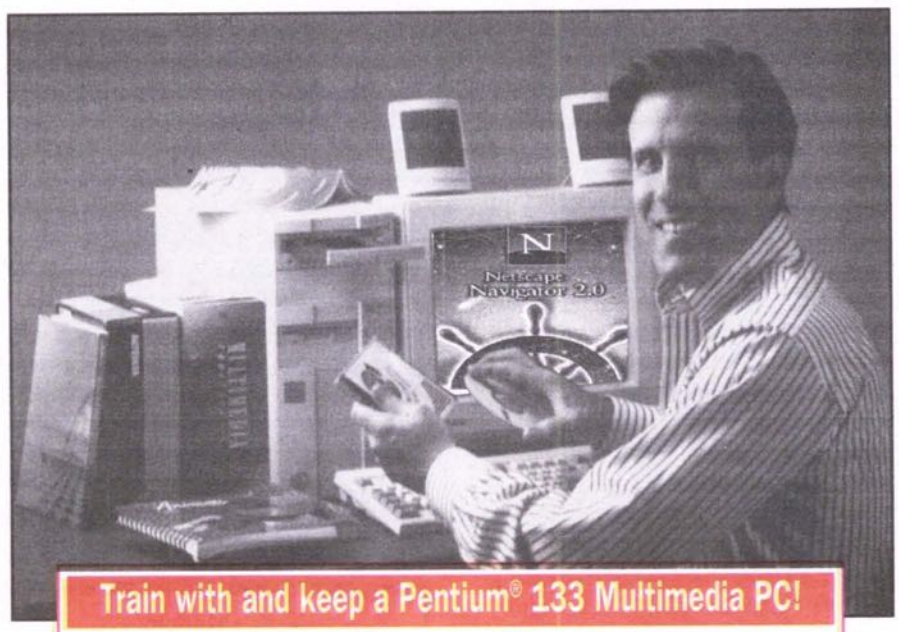

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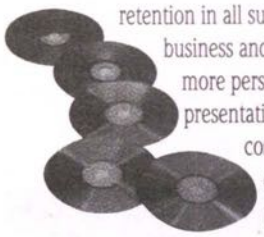

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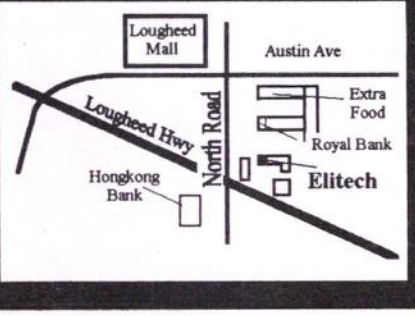

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careers

Compiled by LARA THAIS KING

Some leaders in the technology field view the future of employment with a sense of gloom—but not everyone sees the situation as hopeless. Janis Foord Kirk, author of Survivability: Career Strategies for the New World of Work, believes that although we're in a major transition and the future looks murky, new technology has always been followed by an increase in the number of jobs.

One of the fears people face is losing their jobs to machines. Certainly, many labour-intensive or by-rote jobs are—and may continue to be—on the endangered list. Kirk insists, however, that "these machines still need operators, designers, and managers."

Still, the times, as they say, are a-changin', and to stay competitive, we must change as well. People are moving in and out of jobs more often then they used to and employability is now based on whether a company feels they need you and thinks that you can keep up. Again and again, the focus has been on learning, especially the willingness to learn.

This month, we investigate the hot technology jobs, new ways to find work, and new job opportunities as we approach the year 2000. ◆

Resumes & the Internet

A pairing with potential

• • By ALAN THWAITS • •

We're three years away from the millennium. Scientists are cloning large mammals, everyone has an e-mail address, and pay-as-you-go space flights are being booked. If you're looking for a job, though, the bottom line remains the same—you have to get your resume out to the people who count.

It's true that building a solid resume is still the first step in any serious search for employment, but the whys and hows of doing that have been transformed by the Internet. As for distributing your resume, well, you owe it to yourself and your future to explore the exciting options that go beyond simple paper and snail mail.

info box

WWW
Shawn's Internet Resume Centre
http://inpursuit.com/sirc/
Resume Databases on the Web
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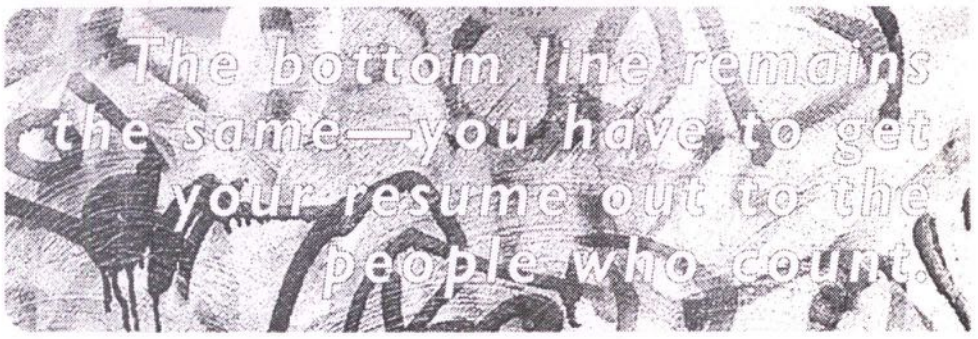
As with every other online-business-related venture, your Net efforts must be tied to your existing business model. In the case of resumes, that means thinking carefully about whether your Net efforts are going to supplement your print-based resume, or whether the online version alone will do the needful. Chances are, unless you're looking for employment in a field that's heavily Net- or computer-oriented, you should consider a twofold (print and online) approach. The presentation and delivery of the two versions will differ, but the content of your resume will be much the same for both.

Be resourceful

There are many good online resources that will help you build an effective resume. For an example, check out Shawn's Internet Resume Centre. Even if you already have a resume completed, it'll do no harm to do some research about what resume styles and strategies are in vogue right now.



Once you've decided on the content of your resume, you may have choices available in your online version that simply aren't there in print. Your print resume will use high-quality paper and an impressive typeface, but the electronic version might include images, sound files, even video clips. It all depends on what delivery method you choose, as does the preparatory work you'll need to do before distribution.

Are you going to deliver your electronic resume via e-mail? Then you'll need to collect e-mail addresses of the presidents, HR directors, and administrators of the relevant companies.

Are you planning to post to a Web-based resume databank? You'll need to decide whether you're going to post to those that allow free postings, or go the extra mile by posting to those that operate on a fee-for-filing basis. If you choose this option, a great resource is the "List of Resume Databases on the Web" site. It's an excellent links-type site that displays a large number of resume database sites where you can post your resume—very often for little or no charge. Most sites are searchable by job category and geographical area, so you can maximize your efforts by using "intelligent search" techniques.

Are you listed?

Want to list your resume on Usenet newsgroups and mailing lists (AKA listservs)? There are lots of these, so you'll have to do some selecting, but users should be aware of a couple of caveats. First, most of those postings are for jobs in various high-tech industries—teachers, cooks, and writers aren't well represented. Second, your resume will be posted in the midst of marketing schemes and get-rich-quick scams as well as legitimate postings.

Once you've written the perfect resume and posted it all over cyberspace, you're back to the old business model. Responses will have to be followed up, phone calls made to prospective employers, and—if you're lucky—you'll get to go for a face-to-face interview, where everything will be decided. Because, as Woody Allen once said, "90 per cent of life is just being there"—in job searches as in everything else. ◆

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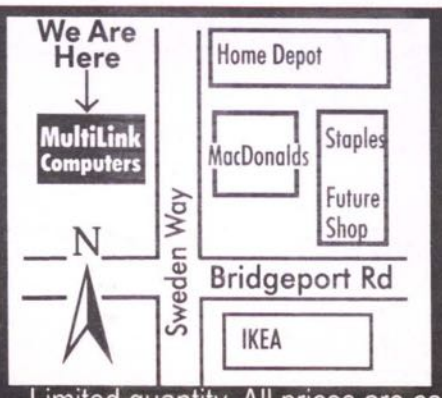

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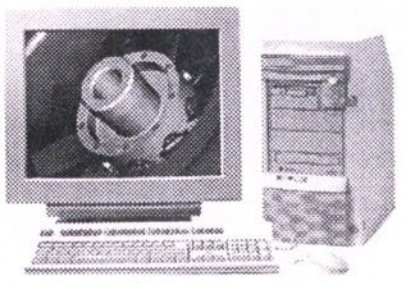

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A few words on the future of work

Compiled by LARA THAIS KING

Who will hold tomorrow's jobs? Industry and career experts told us what they thought would be the best bets for careers in t... twenty-first century. It's not necessarily good news to those of us who thought we were done with education. The consensus is that continual learning is probably the key to success.

Janis Foord Kirk

Careers columnist and author of Survivability *(published by Kirkfoord Communications Inc.)*

"I see tremendous growth in the consulting area...people need two levels of expertise. Need to know how to run the box and how that technology can be used to my advantage. Need to think like consultants and know what problems (in your business) exist. We are becoming more entrepreneurial and that is a good thing.

"There are new rules in career-survival tactics, and people who aren't changing worry me.

"Canada is on the verge of growth, which is encouraging. It is still very volitile, but volitility is still growth."

Paul Saffo

Director, Institute for the Future

"In the short run, the 'big' jobs all are in areas touched by the IP protocol. If you pay close attention to the evolution of the IP protocol, and pick areas that are new, you will be busy.

"But this begs the question of the long term. In the short run, the best way to stay busy is to maintain specialized skills in high-demand areas.

"But in the long run, the best way to stay employed (and employable) is to cultivate two crucial qualities. First, keep the soul of a generalist, even as you specialize. It is a quality that allows one to see the larger opportunities. And second, keep learning new things. Keep studying when you can, for there is no such thing as a stable job in any area touched by technology."

Chris Fisher

Technical Specialist, solution and applications, corporate services, Bank of Montreal

continued on page 24

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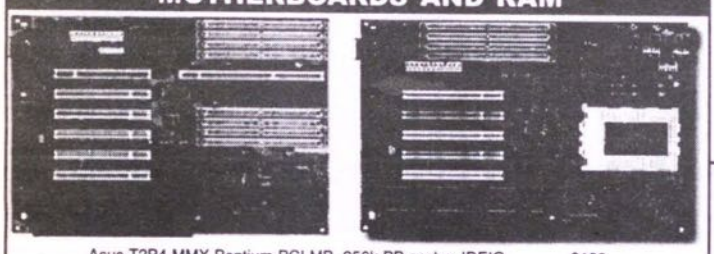

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Quantum Fireball Ultra SCSI-3 2.1/3.2GB	$509/705
Adaptec 2940 SCSI/Ultra/Ultra Wide	$280/300/455
HP Colorado T1000/T3000/T4000S internal	$165/260/550
100MB ZIP drive, 1GB JAZ SCSI drive int/ext	$265 /550/660

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Logitech Serial or PS2 mouse	$85
USR Sportster fax/modem internal/voice (OEM)	$147/166
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HP color inkjet printer 400C/690C/820/870CXI	$269/418/549/689
HP Laser Jet 5L/6P/6MP	$559/1035/1295
HP Scan Jet 5P/4C	$549/1255
HP 6020I CD-ROM Writer (Just the Drive)	$775
CD-ROM Drives 8X/12X/ 12X SCSI	$140/175/230
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Fujitsu 8725/4725	$25/59
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Modem pool I-modem 8/16	$7,875/13,505
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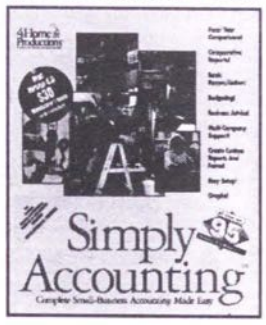

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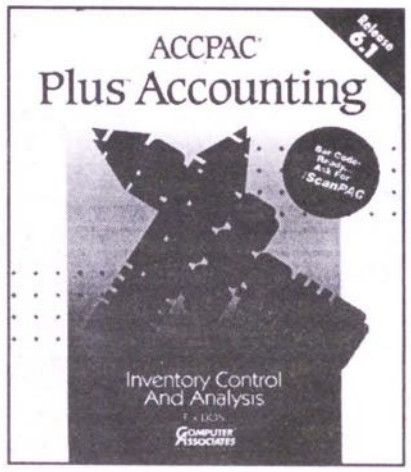

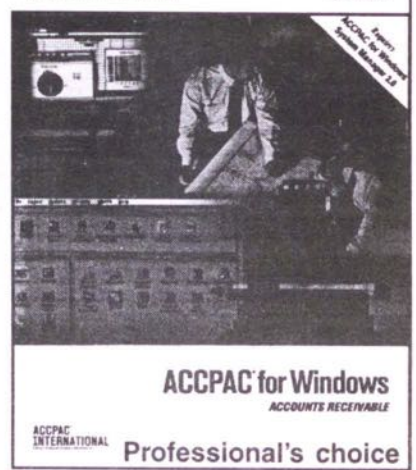

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Cover

Facing a fast, fluctuating future

• • By JIM HARRIS • •

Here is a simple but staggering fact: in the high-tech field, 80 per cent of the technology we will use ten years from now hasn't been invented yet.

I have a notebook computer that is more powerful than a mainframe of only 15 years ago—but 10 years ago notebooks didn't exist. Would you surf the Net without Netscape? *Navigator* was released in October 1994—only two-and-a-half years ago. Many watches today contain more raw computing power than the first lunar-landing module! Bit of a worry if you're an old astronaut.

Many people assume that the future will look pretty much like the past. The past does not predict the future, though. The best way to predict the future is to create it.

GUEST COLUMNIST

What do you need?

We need to separate form from function. Banking is essential, but banks are not (i.e., the function of banking is essential, but the current form is not). The banks of the future may be named Intuit, Netscape, Sun, and Microsoft, because these companies are investing more in developing online transaction capacities than the traditional banks. Banking in the future will have more to do with key strokes and mouse clicks than physical geography.

Traditional wisdom holds that only three things matter in retailing: location, location, location. Levi Strauss, however, has introduced the personal pair. Men fit standard sizes quite well but women are all unique—husbands, you know that. Levi Strauss now allows women to log onto the company's Web page, which shows the user how to measure themselves and key in six unique measurements, along with their credit-card number. Ten days later, a custom-made pair of jeans arrives at their door for only $10 more than the rack price (plus courier costs). Where did location enter into this retailing experience?

What will happen to phone companies' long-distance revenue when we can send digitized voice-messages across the Internet at only the cost of hooking up to the local ISP? Think about video conferencing. What will the impact be on business airline travel when we can hold intercontinental face-to-face meetings right from our workstations?

In 1996, for the first time in the history, e-transactions in the United States exceeded letters carried by the US Postal Service. FedEx's document volumes have fallen by 30 per cent, due to the ease with which we can now e-mail attached documents.

Shaking the foundations

New developments in information technology are enabling radical new products and services to be delivered to customers. How can individuals and organizations create security in these turbulent times? A staggering 44 per cent of North Americans fear losing their jobs.

In the past, job security was based on working for a large company, in a stable industry, with a clear job description, for 40 years, and then retiring with the gold watch. Now, everything that used to create security creates insecurity. Large companies are net job losers (IBM has shed 200,000 jobs worldwide since 1989—half its workforce). Stable industries are being turned upside down. Job descriptions are out of date the moment they are written (it's flexibility and the ability and willingness to learn that count).

And if you've been in the same position for 40 years, your position is less secure, not more.

So what will create security? Only three things: our ability to learn; our ability to change; and our ability to accept uncertainty. And what do we fear most as adults? Learning, changing, and accepting uncertainty. I call it the learning paradox—our security is based on what we fear most.

If 80 per cent of the technology that I will use in the future hasn't been invented yet, how can I take a course to prepare for the change? How many Java courses were offered five years ago? The only way to prepare for the future is to take courses that teach me how to think about thinking, how to learn about learning, how to be more creative about creativity, and how, as a team member, I can work better with my colleagues. I call this meta-learning.

Making serious dough

Pillsbury hires a lot of A- and double-A-type personalities—you know, the just-out-of-MBA-school types who all secretly, in their hearts of hearts, know that they will someday be president—*not*. The CEO is only 40 and he isn't about to retire for 20 years, so how can Pillsbury challenge this group?

Well, they move them laterally. After two years in product development—just when they have become "expert"—the company shifts them to marketing. Two years later, they're moved to logistics, and then customer service. Moving people every two years keeps them challenged, excited, and continuously learning.

After eight years, they have four times the set of skills to market—four times the job security. More importantly, they have learned how to learn. They now carry their security within them.

Jim Harris is a management consultant and professional speaker. He is best known as the coauthor of the *Financial Post*'s national bestseller *The 100 Best Companies to Work for in Canada*. The above article is a summary of the theme of his new book, *The Learning Paradox*. If you would like to buy a special advance-release version of it, e-mail sales@strategicadvantage.com ◆

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Upgrade Options:		Software Options:	
Up to 512K P.B. Cache	+$30	Windows 95 (Release 2)	$130
32MB RAM (from 16M)	+$110	Windows NT (Statetion)	$280
2.6G HD (from 2.1G)	+$40	Corel WP Suite 7.0	$120
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MX150T	P150	16M	2.1G	11.3TFT	8X	28.8	10BT	$6338
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365XD	P133	8M	1.4G	11.3TFT	6X	$3798
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Sure, EVERYBODY TELLS YOU THAT IF YOU'RE NOT ON THE NET, YOU'RE HISTORY. WELL, DON'T LET THEM SCARE YOU.

LET US SCARE YOU.

The scariest thing in cyberspace is an ill-conceived web site. You've seen them——they're badly designed, cumbersome, too dumb, too smart, unapproachable or just plain silly. And that's just the stuff you can see. But what can really hurt is the part you can't see. Behind even the niftiest graphics is where the question of a web site's real integrity is answered: its backbone.

iStar was the first Canadian internet company to mount a nationwide network backbone dedicated solely to internet traffic. The partners we chose to help build it include the best in the business: SUN Microsystems, CISCO Systems, US Robotics and Microsoft.

The result? No one can touch us for the quality and clout of our infrastructure. (Here's a fun fact: our backbone is so powerful it provides many of our competitors with theirs.) And nobody can approach our reliability, flexibility and speed.

iStar's current roster includes 10,000 corporate clients——more, by far than any other provider——many of whom number among the FP 500. And because our commerce service is endorsed by several major Canadian banks, these clients are assured of unparalleled security.

Sure, this entity called the internet is uncertain——a pretty good reason why the internet company shouldn't be.

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Overcoming barriers to learning

• • By JUNE CAMPBELL • •

Many of us agree that computer literacy is an asset when you're job hunting, and lack of computer knowledge can be a roadblock to getting and keeping employment. For some, learning computer skills is as simple as signing up for a course at the local community college and practising on the family PC. For the less fortunate, however, geographic, economic, language, health, and availability factors can be a barrier.

Various BC societies and organizations are helping special groups bridge the gap by providing computer-related training, usually at no charge to the user. The following list of providers is by no means complete.

The Arbutus Vocational Society, in Vancouver, offers computer-skills training (as well as other skill-development programs) to persons suffering from severe and chronic psychiatric illnesses. Students build up stamina and gain skills according to a negotiated schedule that accommodates the effects of their illnesses. Graduates demonstrate entry-level skills in keyboarding, word processing, electronic-spreadsheet use, e-mail, and, optionally, familiarity with an electronic accounting package. A resume, a work-experience placement, and hopefully a reference complete the picture. Referrals to job-placement agencies are available.

Looking north to Terrace, Interconnect, administered by the Terrace and District Community Services Society, provides computer skills training to persons experiencing various barriers to employment. Students from Terrace and Kitimat are referred and financed by the Workers Compensation Board, Canada Employment Centre, ICBC, or by Vocational Rehab Services. Training includes entry-level computer skills, resume writing, and computer-assisted academic learning using the PLATO system.

Work-experience placements are available according to need and interest. Interconnect, operational since 1987, is the first facility in northern BC to receive accreditation from the Private Post Secondary Education Commission of BC.

Skill Enhancement Training (SET), New West Division, in New Westminster has helped approximately 180 people acquire computer-literacy skills and ESL (English as a Second Language) training. SET was implemented in 1994 as a joint Labour-Management plant initiative of MacMillan Bloedel Ltd., New Westminster Lumber Division.

The plant's culturally diverse employee population represents an established workforce, many with 20 or 25 years of employment history. SET participants volunteer for training in order to develop new skills in response to technologically changing work requirements, or to arm themselves with marketable skills in the event of possible layoffs.

According to instructor Merv Graham, "Many go on to get GED training or to get high-school diplomas. They (the participants) are really enthusiastic and motivated in what they're doing."

SET, administered by an employee committee (SET Committee), was the first project of its kind in BC, and is currently viewed as a model for similar programs in other mills. Forestry Renewal BC (FRBC) now provides funding for approved initiatives of this type.

Assistance for women

In Sechelt, the Sunshine Coast Women's Resources Society has been offering computer- and Internet-skills training to local women for the past 15 months. Approximately 120 women have utilized the services to date. As Chairperson Lynne Hauka remarks, "in this community we have become the organization to which women who are at all skill levels turn for (computer) assistance and advice."

The agency's three computers are connected via a LAN and all have dial-up Internet connectivity. Training ranges from informal (drop-in) to more formally structured HTML classes. Funding is through donation and from HRDC.

The Society's new Tech.Kno project is currently conducting a survey of high-technology employers (see their Web site for details). The goal is ultimately to develop a telecommuting centre and to train by apprenticeship a pool of people who have had their skills assessed and upgraded to suit the needs as described by the employers who participate in the survey.

New kid on the block Wired Women Society in Vancouver includes multimedia training in its mandate. According to president Emma Payne, "we want to provide girls and young women the opportunity to learn and understand new media. We feel that girls can, as a result of training, have a different and improved outlook of themselves and the world. The training is meant to be a fun and informative way to discover potential creative talents that many without computers fail to realize."

Two-hour courses, including introductory Internet, graphics, e-mail, and research, are available. Groups will be asked to pay, but will not be turned down if they cannot. Negotiations are underway with Big Sisters to provide training to their girls, and discussions with APACE are exploring the possibility of providing cosponsored training events and materials that will increase Wired Women's scope in the community. Funding is carried out through Wired Women's Fundraising Committee.

June Campbell is the owner of Nightcats Multimedia Productions. You can reach her by e-mail at June_Campbell@mindlink.bc.ca or by phoning (604) 980-3219 during business hours. ◆

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The freedom to work all the time

• • By CARYN MLADEN • •

Careers today are the perfect example of what I call "creeping spec." When you're working on a consulting project of any kind, creeping spec (short for "specification") occurs when your client asks you for small, seemingly insignificant changes in the ongoing project. Pretty soon, all these small changes evolve into a new and completely different project.

Over the past few years, a silent revolution has occurred: employees became contractors; the "standard 9 to 5" became "flex-time," and then became "milestone invoicing;" and benefits became non-existent. Today, not only is there no job security, but many people don't even have the expectation of it anymore. The public has no confidence that their government-promised pensions will be available when they reach the time to collect them. There is infrequent continuity from one job to the next. And yet, people are adapting extremely well—at least in the new media industry.

Lifestyle changes

Yes, it's a contractor lifestyle in the nineties. We belong to no particular company, and yet we have many particular associations and connections. Many contractors work for the same company for long periods of time and become associated with their "job" while retaining contractor status simply because the company has a policy not to hire employees.

Meanwhile, contractors are free to do a variety of different things. It makes it difficult to define yourself anymore but, after you get over the initial feeling of being in employment limbo, this lack of definition is very liberating. Meet people at a trade show and find out what they need. You're a contractor. Can you manage projects? Sure. Can you write business plans? Sure. Can you head up the new media division for our company? Sure, why not?

While people move from contract to contract and are more personally motivated than in the past, a sense of loyalty persists. Largely, this loyalty is drawn out of a sense of pride in one's work, but it also relates to the concern to keep up customer relations. Happy clients hire you back and give great references. Most contractors finding assignments get them by virtue of their reputation in this burgeoning industry.

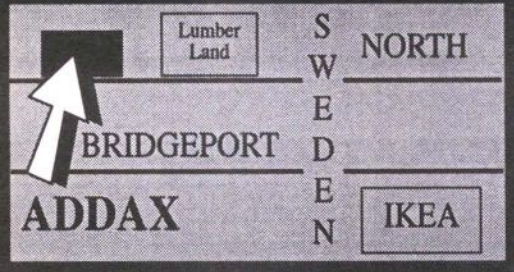
Go SOHO!

What else has changed? Digital media, of course! Today, the paperless office is possible as documents travel online. The advanced efficiency of tools for SOHO (Small Office, Home Office) environments have made working out of your home simpler and more cost effective. A good computer, modem, software, business cards, and service-bureau access are all the basics you need to create an impressive presence out of your basement. You make initial contacts or solidify deals at trade shows; otherwise there is little need to meet in person.

Comfort is another benefit of the digital contractor lifestyle, along with the more relaxed wardrobe. Don't forget, you can also write off the part of your home that you use for work.

Then there's the time you save by telecommuting. At least, we all pretend to have more time. "When there's nothing pressing, I can just take off for a matinee!" The reality is that we work all the time. You can't leave your work at the office; you have to live with it. You book in meetings at odd times—why not chat with a client in Germany at 4:00 AM? There's the all-encompassing guilt we feel about relaxing when we could pick up the laptop and finish that report.

And this is the final lesson to learn from the transformation of careers. Our relationship to work has become more personal. While our job titles reside in limbo, we are more attached to what we create and what we label as our own. There is still much work to be done, but we must constantly be our own PR agents. In effect, today more of us have careers where once we had only jobs. ◆



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Y2K specialists: A seller's market

• • By LEE LESTER • •

Headhunters have a vanishing species in their sights. Their target: anyone who knows COBOL, Fortran, or Program I. Programmers and project managers familiar with the mainframe computer languages of yesteryear are being sought worldwide as the year 2000 (Y2K) comes ever closer.

And the fees of the only people who can squash the millennium bug are soaring. Only two years ago, they could command Can$35-40 an hour. Today, they are pulling in $50-60. And researchers at Giga Information Systems forecast that could rise to US$150 within two years.

"Their rates are going up 80 per cent a year," says Y2K expert Peter De Jager. And, he warns, the sky could be the limit for organizations desperate to avoid the consequences of computers becoming inoperative as the millennium nears.

The problem, of course, stems from dates being stored with only two digits for a year instead of four, so that computers cannot distinguish between 1901 and 2001, for example. Information Technology Association of Canada vice president Peter Broadmore warned a Commons committee last November: "The so-called millennium bug is a problem for all date-dependent calculations and will affect every application in which information technology is applied, in banking, insurance, investment funds, security systems, air traffic control, traffic lights...

"Cheques will not be printed, invoices won't be produced, payroll and pension systems will break down, and many businesses will simply cease to operate.

"Already, many observers believe that lawsuits, bankruptcies, and business failures are inevitable consequences of the problem...a bankruptcy rate of up to 5 per cent could result directly from costs related to Y2K problems."

Where has all the Fortran gone?

Those who can rewrite the millions of lines of code are in short supply. The programming languages they worked with peaked in the early 1970s. Since then, many have retired, died, or been promoted to executive jobs. Inducements to come out of retirement or do "grunt work" again are unlikely to coax many to return.

Those that do are unlikely to be familiar with much of the additional software, written in other languages, which has been grafted onto the original applications.

New graduates are unwilling to learn yesterday's languages. Even the lure of high pay is unlikely to attract youngsters who, after three years of solving the Y2K problem, must then join a workforce where they will not have the up-to-date skills of their peers who, in the meantime, continued to build their familiarity with more modern languages.

There is already a worldwide shortage of computer personnel. Canadian companies have to face US recruiters flowing over the border in force, dangling tempting propositions to anyone with the required skills. It is hard to fight the appeal of better pay, better climate, and better prospects.

Debbie McGrath, president of the CEO Group Inc., which organizes job fairs, points out that more than half the local newspaper advertisements for IT professionals offer jobs in the United States. So did a majority of exhibitors at a recent recruiting event.

Long, long distance

So desperate have some companies become that they are outsourcing the rewriting of their code to places as far away as India and the Philippines. But, says ITAC's Broadmore, even those places cannot cope with the demand for their services. He suggests lowering immigration barriers to allow more skilled IT workers into Canada.

In the meantime, the few who can deal with the millennium bug look set to make big bucks, even as they work to put themselves out of work. ◆

A few words on the future of ...

continued from page 17

"What you need is a good technical base tempered with people skills, management abilities, and an understanding of business.

"The big bucks are in project management. Big corporations want employees who understand technology and will implement it. People with team-building, leadership, and coordinating skills."

Fisher says another good area to look into is Wide Area Networking.

Keith Schengili-Roberts
Technical Writer, KL Group

"It's always hard to predict the future of the job market, especially in the high-tech business. Two years ago, Java didn't even exist, so it would've been hard to predict the whole marketplace that has blossomed due to Java.

"Having said that, it's safe to say that if you are interested in programming, learn Java—*now*. While it is not receiving a lot of publicity, most major software firms are looking for Java programmers.

"Another likely job-growth sector is for people capable of handling the alpha-to-omega of Web sites. True Web-site management not only includes the ability to write good HTML, but maintaining a Web server, writing code to process things like forms, create and use eye-catching graphics, and anything else that is required. Expect Web-server management to become more and more like a Network Administrator job over time, especially as corporate-wide intranets become more common."◆

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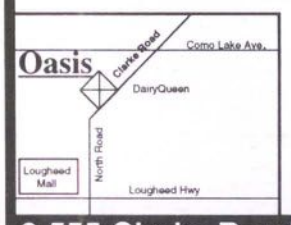

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Bugs aplenty for Microsoft Explorer

• • By PAUL ANGYAL • •

What started out as a bad-hair day, quickly turned into a mini PR-disaster.

On March 3, the story hit the fan that a security flaw was discovered in the *Explorer* browser by some innocent high-school students, one which would allow a Web operator to enter your PC through an LNK or URL file (commonly known as shortcuts) and secretly run your programs.

Move on, nothing to see here

Trying to give it as little play as possible, Microsoft first stated that "no customer has complained," nevertheless "a fix will be made available as soon as possible." That could have been the end of it, had another pesky group of students not discovered another bug in the same program, only a day later. This one would allow a hacker to remotely download and install viruses from a Web site for you.

The day wasn't even over when yet another leak was reported, this time with *Explorer*'s mail and news readers. You find a message on a Usenet group to visit a link and download a program. If you do, chances are that you only download a shortcut, which, when executed starts happily deleting files from your hard drive.

By Friday, Microsoft's whole attitude changed. Somebody on the inside with brains must have woken up and *voilá*, a whole "security Web page" appeared with messages telling us that "they care." A combination fix was in, a 1-800 number was installed and—believe this—tech support responded to special e-mail queries on Sunday.

Coincidentally, a lengthy news story was posted alongside, describing in great detail the "major security hole" found in Sun's Javasoft ("yes, your honour, I am guilty, but he is guilitier"). Unfortunately, the "triple-fix" posted by Microsoft apparently doesn't play all the holes. More as this situation develops.

This just in

Microsoft has released a patch for their *Internet Explorer* Web browser (Windows 95 and NT versions) that is claimed to alleviate a major security hole in the software. Without this patch, it is possible for a remote site to run a program on the local computer's hard drive, possibly resulting in data loss or damage.

Download the patch from http:// www.microsoft.com/ie/ or call 1-800-322-9997 for information on ordering a floppy-disk version.

One final note: the bugs affected *Explorer* 3.0 and 3.01 running over Win95 and WinNT. The Mac version, however, was fine. ◆

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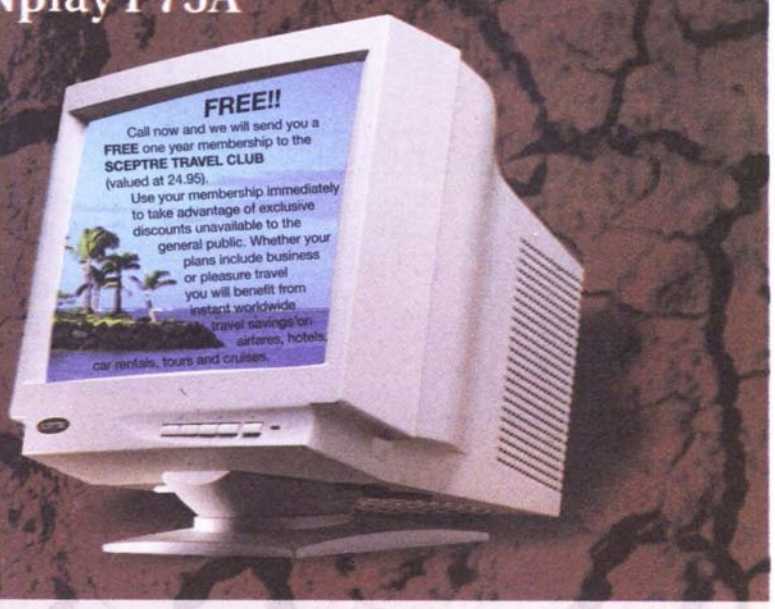

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COMPUCHANGE COMPUTER SHOW. Firefighters' Club, 6515 Bonsor Ave., Burnaby, BC. For more information, call (604) 438-1094 or (604) 438-6114. On the day of the show, call (604) 816-7731.

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INDEPENDENT COMPUTER CONSULTANTS ASSOCIATION OF BRITISH COLUMBIA DINNER MEETING. Call (604) 734-2747 for more information or reservations, or browse http://www.icca-bc.org/icca/events.htm for details. Non-members welcome.

E-mail your event listing to calendar@tcpon.com or fax it to (604) 608-2686. Please include location, contact information, time, and date for our readers. For inclusion in the May issue, calendar information must be received by April 14. ◆

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Thieves let their fingers do the WALKING

Street Buzz

Steve Bain

Lower mainland computer thieves have a new, low-tech tool to scout for potential victims: the telephone.

Recent lower mainland crime reports from theft victims indicate they participated in a bogus telephone survey just prior to being relieved of all their computer equipment. The scam involves the thieves placing telephone calls to the victim's home or office and offering free software in exchange for completing a survey relating to personal income, occupation, personal computer equipment, and work habits. The fraudulent surveyor then asks for the victim's address and a convenient time to have a technician drop by to install the free software. Victims responses inadvertently reveal ideal times for the thieves to plan their robbery and exactly what they can expect to steal.

Victims of this slick computer-theft ring say the survey callers, who claim to be working on behalf of a well-known software company, sound professional and genuine. Anyone receiving this type of call is well advised to decline the survey. Local police say the most effective method for recovering stolen computer equipment is to document all make, model, and serial-number information in case of theft. Anyone who feels at risk is advised to decline participating in telephone surveys of any kind.

EA braces for mega growth

If video gaming is your forte, this might pique your interest. Sometime this summer, the Burnaby-based division of Electronic Arts Canada will begin construction a new 170,000 square foot facility to be new home to their 350 current staff. The new offices will also have room for an additional 200 employees, many of whom will be recruited as the company continues its staggering growth rate. Tentative completion of construction is slated for the fall of next year.

In recent years, Electronic Arts has experienced record sales of its sports-related computer games, aimed squarely at the Sony Playstation gaming hardware and eventually at sophisticated 32-bit dedicated and CD-ROM drive-equipped personal-computer systems. Last year, the company saw revenues of more than $480 million. For more information, see their Web site at http://www.ea.com/ or phone (604) 451-3600.

DNA to release two new CDs

Award-winning Vancouver CD-ROM title-creator DNA Multimedia has released two new titles this month. *Up to the Himalayas* and *Starsites* are the latest of the three-year-old company's interactive productions.

Starsites looks at the myth and science of five of the world's ancient monuments: Copan, Jantar Mantar, New Grange, The Forbidden City, and Giza. *Up to the Himalayas* involves navigating through three-dimensional landscapes and meeting people from cultures including Mustang, Nepal, Sikkim, and Darjeeling.

DNA's locally developed titles concentrate heavily on audience participation through interactivity. Their previous works include *The Silk Road*, *Klondike Gold*, and *Everything in Stages*. The company has won industry awards in the United States and Europe in competitions judged by Adobe, Macromedia, and International Digital Media. They are the North American arm of Japan-based DATT International, with products localized in Vancouver by partner firm FACT International for Korean, Chinese, French, and German markets. For more information, visit their Web site at http://www.dna.bc.ca/

Windows 95 upgraders, beware

As popularity of Microsoft's Windows 95 operating system increases, more businesses are discovering older hardware inoperable with the new platform. Upgraders are subsequently getting pinched by certain local computer vendors who see it as an opportunity to levy potentially unnecessary service calls. Some would even consider the practice shady.

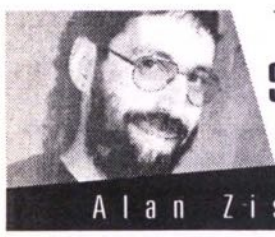
Here's how it goes. Windows 95 upgraders, surprised to discover that an older scanner or printer won't operate under the new platform, are directed by the manufacturer to contact their local vendor for service. Most manufacturers offer free upgrades for their hardware in the form of software drivers and/or upgraded computer-chip replacement. But vendors often keep this information to themselves and instead eagerly send service representatives out to perform the upgrade.

As a result, customers without prior service agreements can be billed for minimum labour charges often as high as $150 per hour—including driving time to the client site. Upgrades are usually estimated at a two-hour minimum.

Hardware upgrades involving processor chip swaps are no more complex than installing RAM chips, and if you're familiar with the procedure you likely already know it's not rocket science. In these cases, vendors conveniently fail to mention that experienced do-it-yourselfers can save several hundreds of dollars in service charges.

Steve Bain is a high-technology writer in Vancouver, Canada. Send news, product tips, or comments to Steve@helix.net ◆

The persistence of DOS



Softwary

Alan Zisman

If you believe the hype, Windows 95 users can forget about DOS. Like a lot of advertising hype, it's absolutely true—part of the time.

Windows 95 does a good job of insulating its users from 1980s-era DOS limitations like the 640 KB memory dead-end and workaround memory-management schemes. Or from having to fiddle with the CONFIG.SYS and AUTOEXEC.BAT startup files. A lot of the time, Win95 actually works as advertised, allowing users to simply start up a DOS program, and have it run (something that was possible much less often with Windows 3.1).

Un-DOS?

While DOS may be buried, however, it's not quite dead yet. Despite Microsoft's efforts to convince us that Windows 95 is the present and future of software development, many game developers remain unconvinced. They've grown accustomed to the power they had, under DOS, to directly access the computer's hardware, squeezing out the best possible performance for their games.

While many popular games are still being written for DOS, most are running properly in a Windows 95 DOS session. That's nice for users—it means that these games can take advantage of Win95's CD-ROM, sound, video, and mouse drivers. In those cases, users don't have to mess with the DOS dirty work.

Many users want to keep playing their old DOS games on their new computers or under their upgraded operating system, though. Or they just bought a new copy of a classic game, perhaps rereleased at a bargain price. These golden oldies often won't be so happy sharing the computer with Windows 95.

Don't give up

All is not lost, however. Win95 allows users considerable flexibility in setting up DOS sessions—far more than Windows 3.1 ever did (yes, OS/2 fans, not as much as that infinitely flexible operating system permits).

Here are a few tricks that should let you run almost every DOS program under Win95 without having to resort to clumsy workarounds like customized boot floppies:

- Increase the amount of RAM in your default DOS sessions

Win95 lets you run a computer without needing the DOS startup files, CONFIG.SYS and AUTOEXEC.BAT. In doing so, however, it doesn't optimize your computer's DOS sessions. Find out how much free DOS memory you have by starting up an MS-DOS window, and typing MEM (remember to press ENTER). If you have less than 600 KB or so free, some DOS games will refuse to run.

You can increase the amount of free conventional (DOS) memory with a little fussing around with your CONFIG.SYS file. Start up Notepad (from the Start Menu's Programs/Accessories submenu), and open C:\CONFIG.SYS—if you don't find one, make a new file. Make sure it has the following three lines:

```
Device=C:\Windows\Himem.sys
Device=C:\Windows\Emm386.exe noems
DOS=high,umb
```

Save the file, shutdown, and restart. Open a DOS session, type MEM again, and see how much free memory you've gained. It may still not be enough. In that case, you will have to check deeper into the workings of your DOS startup files.

- Are you loading unneeded DOS drivers in CONFIG.SYS and AUTOEXEC.BAT?

If you've upgraded from an older DOS/Windows setup, you may be loading unneeded DOS drivers, particularly for your CD-ROM, sound card, and mouse. Open your CONFIG.SYS file again. Check it for additional lines starting "Device=" or "Devicehigh=". These are loading device drivers (software enabling your system to work with hardware add-ons). In most cases, these are not needed, as Windows 95 provides drivers for most hardware devices that don't use up your precious DOS memory.

If you find such statements (besides the Himem.sys and Emm386.exe statements previously listed), don't delete the lines. Instead, "comment them out" by typing "REM" and a space at the front of each line. Save the file.

Similarly, open C:\AUTOEXEC.BAT in Notepad. Check for lines loading what seem to be Mouse or other hardware drivers (you can ignore any lines starting with the word "Set"). Comment them out the same way. Save, and restart your system. Check and see if your hardware—CD-ROM, sound card, mouse, and so forth—are working properly. If so, you don't need those DOS drivers. But don't delete those lines just yet—you're going to need them!

Open a DOS session, and type MEM one more time. At this point, you should have at least 605 KB free conventional memory, which should be enough for most DOS programs.

This is a good start, but you may not be done yet. In next month's column, we'll look at what to do if your programs insist on EMS (expanded memory) or need to run in Win95's special MS-DOS Mode.

Alan Zisman is an associate editor. Comments or information related to software issues should be directed to alan_zisman@mindlink.bc.ca ◆

Feds introduce cyber-friendly budget

• • By CHRISTOPHER GULY • •

Having reduced his 1996-1997 deficit target of $24.3 billion by $5.3 billion, Finance Minister Paul Martin turned his attention to high-tech assistance amid more than $1-billion worth of new spending by the federal Liberal government. Chief among the new initiatives announced in the February 18 budget is the creation of the Canada Foundation for Innovation.

Ottawa will pump $800 million into the new independent, non-profit organization, which is expected to be operational this fall. With interest accrued over the next five years, the foundation will be able to fund about $180-million annually to research infrastructure projects.

Former University of Toronto president Dr. John Evans, a research physician, was named head of the foundation February 19. The group—to be composed of 15 representatives from both research and business—will support initiatives from universities, hospitals, and privately run research institutes, and their capital costs, including acquiring state-of-the-art equipment, establishing computer networks and communications linkages, and creating research databases and information-processing capabilities.

Salaries and regular maintenance operating costs are not eligible for assistance, and projects will only receive no more than half the costs. A research facility would have to find funding from the private sector.

"Fundamentally, they're coming to recognize the tremendous contribution information technology and the strategic application of it makes to the Canadian economy."

Norine Heselton, vice president of policy with the Information Technology Association of Canada, says Martin's emphasis on technology is prudent. "I'm encouraged that the bricks and mortar of the knowledge-based society are still on the government screen," she says.

Excellence to continue

In addition to creating the foundation, the Finance minister also made the seven-year-old Networks of Centres of Excellence a permanent program. The 14 centres, which specialize in such areas as robotics and intelligence systems, microelectronics networks, and telelearning and telecommunications, will be maintained at the annual 1990 funding level of $47.5-million.

The National Research Council's Industrial Research Assistance Program's $96.5-million annual budget has also been preserved. IRAP promotes technology to small businesses.

Although the president of the Canadian Federation of Labour says the $425 million Ottawa recently set aside for infrastructure job creation will have an immediate impact on Canada's 9.7 per cent national unemployment rate, James McCambly says Martin was right to target technology in his budget.

"There are all kinds of demands for jobs in software, hardware, and computers," he says. "Canada has to be at the forefront of technology. Otherwise, we're not going to be able to have high-paying jobs, which is part of our goal."

The Martin budget also allocated a further $30 million to the Community Access Program, which was created in the fall of 1994. The new goal is to connect about 5,000 rural and remote communities, ranging in population from 400 to 50,000, to the Internet.

In focusing on technology in what will likely be its final budget before the next election, Heselton says the federal government is showing that it's investing in the future.

"Fundamentally, they're coming to recognize the tremendous contribution information technology and the strategic application of it makes to the Canadian economy."

Information on the 1997 federal budget can be found on the Finance department's Web site at http://www.fin.gc.ca/. ◆

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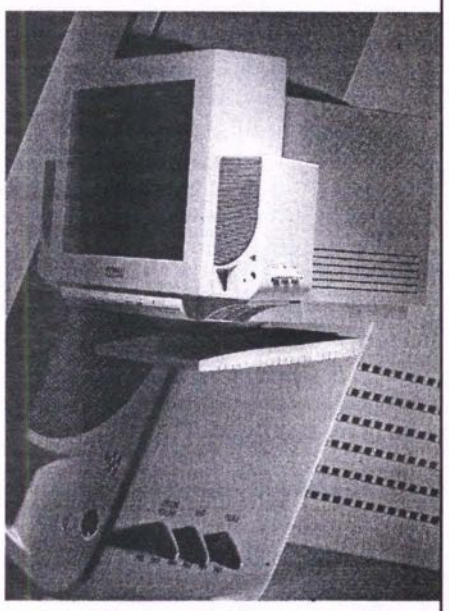

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Mac clones proliferating

• • By GREG SALMAN • •

It's been a year since Apple took the progressive, and some said very risky, step of licensing its operating system (MacOS)—the software interface that makes a Mac unique—and hardware architecture to several third-party companies, so that they could produce Mac "clones." In this short year, several companies have proven the viability of the MacOS. In fact, despite early nay-sayers and predictions that Apple would go out of business because it was giving up its monopoly, this is probably the best thing to have happened to the Mac since its advent.

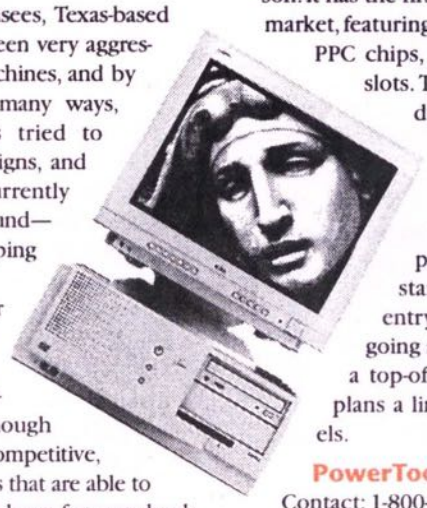
Recently, more and more companies are joining the ranks of Mac-clone manufacturers, which could signal a comeback for the Mac. The trick is that the Mac-clone market is almost as confusing as the IBM PC-clone market. Just as in the PC world, different companies offer different configurations of hardware at different prices, but you can be sure of one thing: all of these machines will run MacOS.

Here's a brief who's who of the Mac clone market:

PowerComputing

Contact: 1-800-405-7693

The first of the licensees, Texas-based Power Computing has been very aggressive in marketing its machines, and by default the MacOS. In many ways, Power Computing has tried to improve on Apple's designs, and the company can currently boast the fasted CPU around—PC or Mac—at a whopping 300 MHz.



At one point, Power Computer's clones were the only choice for cheaper, home-oriented machines, and although their prices are still competitive, there are now companies that are able to provide even better Mac bang for your buck. Power Computing is still the winner when it comes to powerhouse speed systems, though.

Motorola

Contact: 1-800-759-1107

Motorola is the manufacturer of the CPU chips that have been the heart of the Apples since Macintosh computers were first made. Their new line of Mac clones is called StarMax, featuring top-of-the-line, competitively priced Macs that all include Motorola's other most favored product: modems. These systems are supposed to be even better than the ones Apple designs, but that's just a rumour.

UMAX

Contact: (510) 226-6886

UMAX has long been a manufacturer of Apple peripherals, such as scanners and video cards. UMAX now offers several Macintosh clone models in their SuperMac line. They took over the license from Radius computers, who weren't able to find a niche for their higher-end product. It remains to be seen how UMAX's mid-range clones are accepted.

APS

Contact: 1-800-235-2753

One of the better buys you can get currently is from APS, a Missouri-based manufacturer of hard drives and other peripherals. Their M*Power series of computers has more features for the lowest price out there today. Besides giving you great deals, APS will also allow you to customize your Mac clone from the factory. And the technology that goes into these comes from Motorola, unlike some of the other clones made by sub-contractor companies.

DayStar Digital

Contact: (770) 967-2077

DayStar was the first Mac clone to offer multiple-processor technology for the Mac, even before Apple did. The Genesis MP uses to PowerPC 604 chips to provide workstation-like results in a Mac—perfect for video editing and graphics. These machines are also expandable, unlike Apple's two-chip 9500MP models. For the moment, DayStar only markets these higher-end systems.

Vertegri Research

Contact: (604) 688-6792

The only Canadian entry in the clone market is Vertegri Research. The imediaEngine line of clones is also distinct for another reason: it has the first portables on the Mac-clone market, featuring 240 MHz and 200 MHz 604e PPC chips, and no batteries or PC-card slots. The idea is to make a heavy-duty portable for people who need all that power for presentation, but aren't likely to sit around writing their novels in cafes. The prices are also pretty hefty; starting about $5,500 for an entry-level 200 MHz system and going all the way to over $7,000 for a top-of-the-line model. Vertegri also plans a line of high-end desktop models.

PowerTools

Contact: 1-800-891-4307

The latest entry into the Mac-clone market, PowerTools is based in Texas like Power Computing, but there's no relation between the two companies. Aggressive pricing and an attempt to cater to the graphics industry seems to be where this company plans to compete.

Who's next?

There's more to come. Several other companies are currently working on bringing more Mac clones to the market. For example, Daewoo, a Korean computer giant, has licensed the MacOS and hopes to have systems for sale in North America before the end of 1997.

In all of this, let's not forget one last manufacturer, one not easy to overlook, especially since they recently dropped the prices on their entire line of products: Apple. That's right, all this competition has forced Apple to get a little leaner, and a little meaner, to stay in the race to sell hardware that runs their OS—which is a good thing for all of us. ◆

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Happy 20th to BC's Basic'ly BBS

• • By ALAN ZISMAN • •

Basic'ly BBS, a free service run by Bob and Sharon Satti, celebrated 20 years of continuous operation on January 10.

Bob, a programmer specializing in networking software, became interested in what was then called Remote or Host Systems in the mid-1970s. He found another hobbyist in Toronto with similar interests, and after a lot of experimentation, they reached a milestone of sorts. According to Bob, "One day he typed an 'M' and I received an "H," and we each celebrated this success by going out for dinner."

After making the process a little more reliable, he went online on January 10, 1977. "The phone company couldn't understand why I would want a second line in my house!"

Over 195,000 phone calls later, Basic'ly consists of a network of 24 IBM-compatibles (a mix of 286, 386, and 486 computers), mostly in a spare bedroom in the Satti's home in Surrey (outside Vancouver BC), with 1,730 active users. Over 9 gigabytes of files are available across the collection of hard drives, along with a wide range of message bases. The system doesn't support online gaming, or libraries of graphics (often a euphemism for pornography); the Sattis say that these are widely available elsewhere, and prefer to keep their phone lines available for more serious users.

The Sattis have provided Basic'ly as a free service despite the ongoing costs of maintaining seven phone lines and two dozen computers—they estimate that it adds $50-60 per month to their hydro bills (the computer room requires air conditioning year-round), and about $300 to each phone bill. They see themselves as providing a valuable community service, citing, among other benefits, message groups focusing on alcoholism and abuse survivors.

The gift of time

Keeping the service up and running takes more than money; on average, it takes anywhere from two to four hours a day to keep Basic'ly going.

Their advice to would-be system operators ("sysops")—equally valid to others, I believe—is to place a computer in the living room, where it can become part of the family life, rather than an isolated hobby. While the bulk of Basic'ly is housed on 20 computers upstairs, the Sattis have another 4 clustered around the family TV, letting them control the BBS or work on other computer-oriented tasks. As a result, Sharon vehemently denies being "a computer widow."

Basic'ly is connected to other BBSs via FidoNet, a grouping of over 30,000 nodes worldwide. This allows users to exchange e-mail and topic-oriented messages without cost (although it is slower than through equivalent Internet services). For several years, Bob has been Fido Zone 1 (Canada and USA) coordinator, having whatever passes for power in Fido's anarchic structure.

Keeping on

In the past few years, faced with the explosive growth of the Internet, many have suggested that traditional BBSs are

continued on page 33

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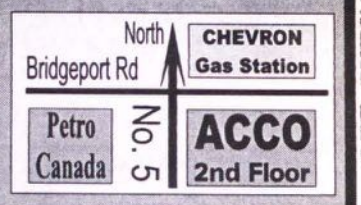

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Feature

TongueInCheek speaks to the future

• • By DAVID WILSON • •

VoiceCon Systems Inc., has announced TongueInCheek, a hardware/software solution designed to recognize, import, and translate human speech into text files. "TongueInCheek is designed for people who need to translate recorded and stored speech into text, but it goes further than the voice translators already on the market," says Dagny Taggart, a spokeswoman for VoiceCon.

Which witch is which?

Any linguist can tell you that spoken English is notorious for its ambiguity. But homonyms—words that have different meanings, yet sound the same—are apparently no problem for TongueInCheek. Taggart demonstrated by reading phrases such as "which witch is which?" and "Their waiter put their glasses there." In every case, TongueInCheek understood and translated the correct English word!

The TongueInCheek product consists of a specially modified, OEM version microcassette recorder licensed from Sony, a series of connection cables, and its CD-ROM-based voice-recognition software and accent algorithms. An external microphone is suggested to minimize the mechanical noise of the recorder itself.

Taggart also demonstrated that the software does an impressive job in less-than-optimum conditions. She borrowed a cassette tape from one of the reporters who had been recording the event, placed the reporter's tape in the TongueInCheek recorder and launched *Microsoft Word* on a Power Mac (text flows directly into any standard application). Taggart then selected the "noisy" setting in the software and TongueInCheek started translating the text in tape into words on the screen. Almost every word translated accurately, with only occasional glitches due to loud ambient noise.

TongueInCheek requires at least a Pentium running at 133 MHz or better, Windows 95, 32 MB of RAM, and a SoundBlaster-compatible sound card. When the software is installed, it modifies the menu of the particular application program (such as a word processor), so using TongueInCheek is as simple as importing text from another application (see graphic).

Power Mac owners need at least 16 MB of RAM (32 MB recommended) and Apple's Open Transport installed. The sheer size of TongueInCheek (about 50 MB, if all dictionaries are loaded) necessitates a CD-ROM drive for initial loading.

Other uses for TongueInCheek

Predictably, Taggart rhapsodized about the potential uses of TongueInCheek. "Students won't have to worry about missing anything in class—and neither will reporters at a press conference," she smiled. TongueInCheek—used with Sony's optional lecture microphone available for about $125 Canadian—can also help combat repetitive stress injury (RSI).

Injecting some fun into the briefing, Taggart also suggested TongueInCheek could be used to settle bar bets. "Ever wondered what the heck Tracy Chapman, Nirvana, or Seal are singing? TongueInCheek takes the sounds, applies complex algorithms, and gives you the answer," she claims.

At Can$199 for the basic unit (and $299 with all the accessories thrown in), it's doubtful that TongueInCheek will find much of a market settling bar bets. What is likely, however, is that this new product will capture the attention of many people—professionals and students alike.

VoiceCon can be reached at (403) 555-1212.

April fools! ◆

BrainWaves makes waves

• • By LUAS SONREHC • •

Orbit Systems Inc. has developed a new microchip it says can be implanted in the human brain, offering individuals 24-hour global access to the Internet that can be controlled and directed by human thought.

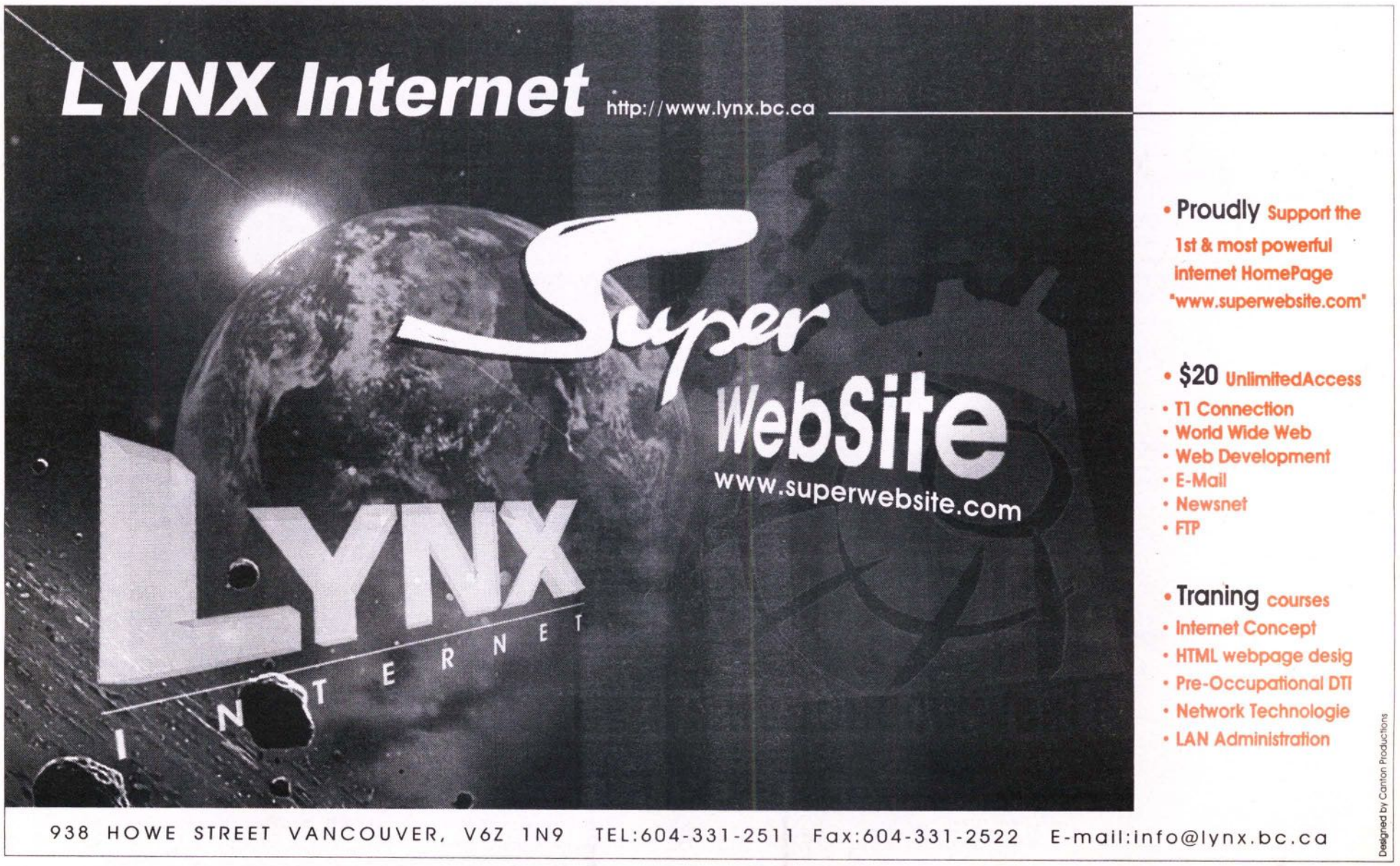
"Really, this is just an extension of what we have done for several years with pets," Orbit research director Emma Plant says. She explains that several companies, including Orbit, already market special microchips that are implanted into cats, dogs, and farm livestock in order to ensure their proper identification.

"We have recently developed new chip technology called BrainWaves that enables two-way communication," Plant explains. "Each microchip contains a microscopic modem and hard-drive, so the essential hardware is contained in a tiny fingernail-sized steel package that can be medically inserted in a non-sensitive area of the brain," Plant says. "We found that software functions can be mimicked by the human brain, using a combination of conscious and subconscious thought patterns."

Live testing was conducted on animals. Although animals aren't capable of human thought, certain brain enzymes are similar enough that the test subjects were able to "push certain buttons to make the hardware perform basic communications tasks," Plant says.

In early March, Orbit Systems, on the Web at http://www.orbitchip.com/, applied to Industry Canada and Health and Welfare Canada for permission to test the chip using willing human subjects. Federal government officials said they couldn't comment on Orbit's plans because they have yet to be formally presented.

April fools! ◆



Happy 20th to BC's Basic'ly BBS ...

continued from page 30

obsolete. The Sattis beg to differ. While they agree that some BBSs are shutting down, they point out that, in their experience, this has always been the case; like trendy restaurants, only a few survive for five years or more.

Basic'ly's user base dropped by about 10 per cent, perhaps a result of users switching to the Internet, but recently started rising again. Calls have remained steady at about 200 per day, the maximum the system can handle without expanding the number of telephone lines.

For many users, the Sattis suggest, a local BBS will remain a valuable resource, providing a simpler interface where information is easier to find. FidoNet message groups, because they are moderated, tend to offer a "higher signal-to-noise ratio" than their Internet counterparts, Usenet groups, where readers often must wade through hundreds of off-topic messages or flames to find the information they seek.

As well, large files can often be transferred from a local BBS much faster than over an often-tenuous Internet connection. Similarly, performance on a local chat group tends to be much higher than the equivalent Internet Relay Chat.

Finally, Bob Satti suggests, the cutting-edge on the Internet is demanding faster and faster connections and cutting-edge hardware; the new RealVideo, for example, needs a 200 MHz Pentium Pro to receive real-time video. Large numbers of users, perhaps the majority, will always be unable to make use of these technologies. For them, BBSs like Basic'ly can provide a home.

While the Sattis have given a lot to the online community, they feel like they've gotten as much back: "a strong comradery that we don't see in the Internet." They're looking forward to the next 20 years.

To dial into the Basic'ly BBS, call (604) 584-9811. ◆

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New *Star Wars* toy stuns the market

• • By CLAIRE YOUNG • •

The hype surrounding the re-release of the *Star Wars* trilogy has led to a replay of the merchandising bonanza first seen when the original films appeared. Just as the films have been updated and made more "high-tech," the merchandising has improved as well. For nostalgia, you'll still find the shelves of your local toy outlet stocked with Luke, Leia, and Han Solo action figures, but some of the new toys are truly astounding.

Remember the plastic light sabers we all played with back in the 1970s (admit it, we all had them)? Well, they're back, but in a new and improved version. For $39.95 at local toys stores and department stores, you can get a battery-operated Deluxe *Star Wars* Light Saber that is far closer to the film version than the old plastic model.

The handle appears innocuous enough before the saber is activated, but press the button to "on" and a light emerges. So, it's a flashlight, you say? Close, but this light is well-defined and can pack a punch. Constructed as a hybrid hologram, laser, and flashlight, the activated light saber "blade" appears as a sword made of glowing light. The real kicker is the Stun setting, which allows you to use it in play fights and give your opponent a slight electrical charge.

Simply shocking!

Olympic fencers have been using a similar stun feature on their steel swords and epees during training for the past two years. They say that it gives them a better feel for the parts of their bodies they are leaving open to attack, and therefore improves their skill. It also apparently heightens the sense of competition. For the *Star Wars* version, the only down side is the battery life. Four AA batteries last about an hour and a half, so make sure you use rechargables.

The charge itself is slightly more potent than the static charge you would get from touching someone after rubbing your shoes on a carpet, but it has received a few complaints in certain US markets. The product disclaimers warn against allowing more than ten hits in any one-hour period, but product spokespeople are quick to assure customers that the product is perfectly safe.

Bob Taylor of NewStyle PR defended the product at a recent press conference: "The charge is simple electricity that quickly dissipates and passes through the body. It is not dangerous to children, especially when viewed in comparison with the other combat weapons available on the market. These Light Sabers, in fact, take us back to a gentler, more noble age."

Maybe so, but if you're interested, you'd better rush out to get your own saber now in case they are taken off the market in the near future. Considering the value of the *Star Wars* brand, they are likely destined to become collector's items.

May the Force, and your trusty Saber, be with you! April fools! ◆

Virus hoaxes: Never-ending stories?

• • By ROBERT SLADE • •

When I was initially asked to do an article for the April edition, the Powers-That-Be thought it would be a good giggle to write up a hoax virus report. We in the antivirus research community don't think that virus hoaxes are such a funny idea, however. They tend to persist long after the "joke" is over.

For example, the warning about the "Good Times" e-mail virus—which doesn't exist—steadfastly refuses to die. Also, Penguin books recently thought it would be amusing to publicize a new book by sending out a press release warning of the "Irina" virus, another hoax. We're still getting questions asking if various antiviral software will detect it.

Instead, I offer you a true story of a virus hoax run riot. And as Dave Barry would say, I am not making this up.

Infoworld magazine, in April of 1991, carried an article reporting a computer virus that the US authorities had used to shut down Iraqi computer systems during the Gulf War/Operation Desert Storm. The bare bones of the article are that a French printer illegally purchased by Iraq was to have been smuggled into Iraq through Jordan; that US agents intercepted the printer and replaced a microchip in the printer with one reprogrammed by the NSA; and that a virus on the reprogrammed chip invaded the air-defense network to which the printer was connected and erased information on display screens when "windows" were opened for additional information on aircraft.

The *Infoworld* article was, to careful readers, an obvious April Fool's joke (supported by the name of the virus: AF/91). The article ended with the warning that the virus was out of control and was now spreading through systems in the Western world. It was a spoof of the then-new Windows 3 program, the popularity of which was startling industry analysts. Readers of *Infoworld* had a chuckle and forgot about it.

Huh?

Someone, however, didn't get the joke. In early 1992, reports started of a virus that had shut down Iraq's air-defense system during "Desert Shield/Storm." This seems to have started with *Triumph Without Victory: The Unreported History of the Persian Gulf War* and the serialization of the book by US News and World Report. The articles were rerun in many papers, as well, apparently, as on CNN and ABC's "Nightline."

By this time, the antivirus crowd was being inundated with requests for help and information regarding the "Desert Storm" virus. Since the only help we could give people was to tell them they'd been had, USN&WR, CNN, and ABC started to look a bit foolish. Their researchers checked with the Pentagon—who, astoundingly, confirmed the existence of the virus! Obviously a case of official "sources" taking their own information from gossip that had mutated from reports of the joke.

Robert Slade demystified the Desert Storm virus pretty thoroughly in *Robert Slade's Guide to Computer Viruses*. More virus information can be found at http:// www.freenet.victoria.bc.ca/techrev/mnvr.html ◆

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Operating systems: A head-to-head comparison

Compiled by LAUREN BLANKSTEIN

Comparing operating systems is a sticky and possibly dangerous undertaking. They can be compared in many different ways, with criteria that are often hard to quantify. Also, people tend to develop an unswerving loyalty to their chosen OS—a bizarre attachment that often elicits defensive and fiery responses to any criticism.

Unfortunately, due to space restrictions, we were not able to address all (or even most) of the various elements that make up an operating system in our comparison. Instead, we chose to focus on questions and issues that might best help the average computer user in the throws of deciding which OS to choose for their individual needs—a decision that can determine whether turning on their computer is a painful or productive experience.

We enlisted the help of our writers to represent what we believe are the most widely used operating systems: Lynn Greiner answered for Windows 3.1 and Windows 95, Kevin Linfield covered OS/2 and Linux, David Rosen went to bat for Macintosh, and Alan Zisman responded for Windows NT.

1. *For what environment (home, business, school) is your OS best suited?*

LINUX—School (students), Internet machines (Web servers), anywhere where security is needed. Best multiuser operating system.

MACINTOSH—This is difficult to quantify, but I'd say the MacOS is best in a home, small- to medium-scale business or school environment, but not in a heavy-duty data-processing or mainframe shop. Some people say the Mac wasn't designed to run in large-scale networks, but I've seen ones at Apple, Northern Telecom, NASA and other places that do just fine running thousands of Macs.

OS/2—Power home user or business. Good for software developers (developing DOS or Win 3.x software). Excellent for networks.

WINDOWS NT—Designed as an industrial-strength workplace operating system. Many home users will be frustrated by its lack of Plug and Play, lack of drivers for some popular peripherals (such as printers), and the need to dual boot to DOS to run many games, as well as its high hardware requirements. Its built-in networking client support and security features make it well-suited for many business users.

WINDOWS 3.1—Any environment, although many businesses are opting to jump straight from Windows 3.1 to NT

WINDOWS 95—Microsoft positions 95 as an environment for those needing DOS/Windows 3.1 application compatibility.

2. *How computer-savvy should a user be (beginner, average, expert) to quickly learn how to use this OS?*

LINUX—Average to expert. OS experience is a plus.

MACINTOSH—The Mac is appropriate for all levels, but is especially well suited for beginning and moderately experienced customers due to its ease of use and seamless integration between its hardware and software. Macs are designed for people who work with information but don't want to get involved in the bits and bytes of programming.

OS/2—Aimed at average to expert.

WINDOWS NT—NT systems probably need to be initially set up by a moderately expert person; afterwards, with the Windows 95 interface, a beginner can quickly become a productive user.

WINDOWS 3.1—Used by every level, from novice to expert. Users new to Windows 3.1 find it puzzling at first, but even novices catch on to the basics within an hour or two. More advanced use and troubleshooting do have fairly steep learning curves.

WINDOWS 95—Used by every level, from novice to expert. According to Microsoft, Windows 95 is more intuitive (they did extensive usability lab testing to make sure even a novice could catch on quickly). Windows 3.1 users attempting to switch tend to have some frustrating moments because of the radically different user interface.

3. What are the hardware requirements for your OS (memory, disk space, CD-ROM)?

LINUX—Text mode: 386, 4 MB RAM, 10 MB hard-drive space (minimum). Graphical: 486, 8 MB RAM, 100 MB hard-drive space. Mouse and CD-ROM recommended but not required.

MACINTOSH—Mac OS 7.6 requires a Mac or Mac compatible with a 68030, 68040, orPowerPC processor or higher, at least 16 MB of RAM and at least 70 MB of hard-drive space (this number varies based on installation choices). Optional portions of Mac OS 7.6 (such as Cyberdog, OpenDoc, and QuickDraw 3D) require a PowerPC processor. A CD-ROM drive is recommended but not required.

OS/2—OS/2 Warp 4.0 requires a minimum of 12 MB of RAM, a 486 processor, and 80 MB of hard-drive space. A CD-ROM and mouse are recommended but not required.

WINDOWS NT—16 MB RAM minimum (32 MB better). Roughly 120 MB hard-drive space. CD-ROM required for installation.

WINDOWS 3.1—"Official" requirements are 286 PC or better with 2 MB RAM and 6.2 MB hard-drive space. For Windows 3.11, "official" requirements are 386 SX or better, 3 MB RAM (4 recommended), about 6.2 MB hard-drive space (14.5 recommended).

Realistically, a 386 DX with 8 MB RAM and 20 to 30 MB hard-drive space works better. Windows may install into only 14 MB or so, but as soon as you install an application, fonts, supplementary drivers, and so forth they gobble space. A mouse is theoretically not necessary, but few users can cope without one.

WINDOWS 95—"Official" requirements: 386 DX PC with 4 MB RAM (8 recommended), 50 to 55 MB hard-drive space, VGA monitor or better. Realistically, Windows 95 is a dog in 4 MB RAM, barely adequate in 8 MB, and is happiest in 16 MB or more. A faster processor is better as well, and count on about 70 MB disk space. A mouse is almost a necessity.

4. What steps are required for installation?

LINUX—Boot from floppies; install from CD-ROM.

MACINTOSH—Easy. In fact, the new Mac OS 7.6 has a centralized and streamlined installer eliminating most (if not all) installation problems. Remember, though, all Macs come with the operating system preinstalled.

OS/2—Boot from three floppies, then install

continued on page 37

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Operating systems: A head-to-head ...

continued from page 36

from CD-ROM. May need to repartition (i.e., reorganize) if running multiple operating systems (comes with Boot Manager and Dual Boot for this purpose).

WINDOWS NT—If hardware meets the NT compatibility list, installation is straightforward. (Note: installation of NT Server is, inevitably, much more complex). If no networking is involved, it is quite simple; if networking is involved, users need to be able to answer some technical questions related to their network.

Note, however, that while NT can be installed over an existing Windows 3.1 installation, and will properly migrate application settings, if installed over an existing Windows 95 setup, applications will need to be reinstalled.

WINDOWS 3.1—Run setup from DOS, verify the system hardware when asked, choose an installation directory when asked, select a printer when asked, change up to eight diskettes. Need some PC knowledge, has no smarts about device detection. Adding devices can be a pain.

WINDOWS 95—Best done from a CD. Must enter a code from the Certificate of Authenticity before installation can proceed. Must know what hardware is installed, although the installation tries to detect it. To make things easier, a "wizard" walks you through a procedure, step by step, explaining what it's up to and helping you make the necessary choices. More complex than 3.1.

5. How much aggravation is involved in maintenance (e.g., defragmentation, file repair, and so on)?

LINUX—Minimal. No defragmentation needed. OS automatically fixes errors. Non-postscript printers can be a hassle.

MACINTOSH—Low. The philosophy behind the Mac OS is that the machine should do the thinking if it's at all possible, letting the computer's owner concentrate on the real job at hand.

OS/2—If using HPFS file system (a file system used by OS/2, versions of NT, and various flavours of UNIX), minimal. No defragmentation needed. Auto checkdisk.

WINDOWS NT—Because NT is very stable, there's not much problem with system crashes. Users of NT's own NTFS file system, in particular, have a very stable system, and find less file fragmentation than with standard DOS and Windows systems. Note that no defragmentation utility is included with the operating system, but a free utility is available called *Diskeeper Lite*, from Executive Software.

WINDOWS 3.1—Should regularly run a disk-checking utility to repair lost clusters and occasionally defragment the hard disk. The Windows 3.1 swap file may need occasional adjustment. Needs third-party applications to delete unused programs.

WINDOWS 95—Should regularly run a disk-checking utility to repair lost clusters (Windows 95 Plus pack includes a System Agent that automates this and other housekeeping) and occasionally defragment the hard disk. Manages its own swap file dynamically. An option to "uninstall" makes deleting unused programs tidy.

6. Support—are updated drivers easily/frequently available? Is there a lot of information available (in books, magazines, etc.) about your system?

LINUX—User community writes their own drivers. Extensive availability. Moderate number of UNIX books.

MACINTOSH—A place where the Mac really shines is adding drivers (called Extensions or Managers on the Mac). In the Mac, the OS knows what these drivers are and loads them automatically in the correct place on the hard drive (usually the Extensions Folder). Just about any online service has Mac extensions, free for the downloading. Apple also includes a mini-application called Extension Manager, designed to resolve conflicts between various third-party extensions.

OS/2—Lots of drivers from the Internet. Lots of information on the WWW. Minimal number of printed magazines.

WINDOWS NT—The number of books available on NT 4.0 workstation has been steadily growing since its release last fall. I now count about a dozen aimed at a "general" audience. *Windows* magazine and *Windows Sources* magazine include the best ongoing information about NT 4.0. Updated drivers are available from http://www.microsoft.com/, where two service packs and several general updates have also been posted.

WINDOWS 3.1—Drivers and patches are available on the Microsoft Web site, plus some online services. If the patch doesn't exist now, it probably never will, but manufacturers still supply device drivers.

WINDOWS 95—Actively supported; manufacturers still supply device drivers.

7. Does the OS have built-in support for the Internet? How easy is it to hook up to the Net? What steps are involved?

LINUX—Free dialer and TCP/IP software. Must be manually set up for SLIP/PPP.

MACINTOSH—Mac OS 7.6 enables easy connection to the Internet by including the latest versions of the Apple Internet Connectivity Kit, OpenDoc Essentials Kit, Cyberdog, and Open Transport software, as well as connectivity tools such as PPP, TCP/IP, and ARA. CyberDog technology lets you bring the Internet into your Live Objects-aware documents. This means, for example, that you can connect to live Web pages using simple single-button access to the Net. The new OS also includes a copy of AOL Canada's software, letting you join the AOL community as well.

OS/2—Yes, it has built in support for any ISP (Advantis is IBM's own, but comes with full software to hook up via SLIP or PPP to any ISP). To connect to Advantis, simply double click on an icon. For other providers, fill in the blanks (TCP/IP info required).

WINDOWS NT—TCP/IP and Dial-Up Networking are included and relatively straightforward to install. NT 4.0 ships with Microsoft Internet

continued on page 40

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Operating systems: A head-to-head...

continued from page 37

Explorer 2.0, an obsolete version, but it is easy to obtain copies of either IE 3.01 or Netscape Navigator.

WINDOWS 3.1—No Internet support, must obtain add-ins.

WINDOWS 95—All necessary software included.

8. *What sort of security is available for the OS?*

LINUX—Everything. It has full user and file-system security.

MACINTOSH—Apple sells At Ease, a product designed to keep prying eyes away from important files on your Mac. It's targeted at classroom and family environments, but can be defeated relatively easily by someone who know a bit of Mac programming. There are lots of third-party security-software packages that do a great job at keeping all but the most determined hacker away from your Mac files—probably about the best you can hope for in a microcomputer environment.

OS/2—Basic password. Lots of third-party software. In a non-networked environment, OS/2 is similar to Win95 as you can have the operating system ask you for a password before you can access the machine (screen, keyboard, and mouse are locked out). You can, of course, boot from floppy disk (if the BIOS is set to A:, C: not C:, A:) and then access everything. Note that DOS-bootable disks cannot read HPFS file systems without third-party software. Third-party software includes password protection for folders and icons (i.e., can't run some software or open folders without a password) and you can prevent others from altering your Desktop.

WINDOWS NT—NT is designed with a great deal of security built in. Users must log in when starting up. The optional NTFS file system provides security down to the individual-file level, as well as excellent disaster-recovery features.

WINDOWS 3.1—Windows for Workgroups (3.1 or 3.11) has user login, which can be easily bypassed. User login is not a feature of the standard Windows 3.1. There is third-party software available that will protect files and lock the PC.

WINDOWS 95—Security is limited to user login that can be easily bypassed. Users can define different personal setups and access them by logging in. Screen savers can be password protected to prevent passers-by from accessing the system while it's unattended, but this is easily defeated by rebooting. There is third-party software available that will protect files and lock the PC.

9. *Does your system have complete power management for notebook computers?*

LINUX—No.

MACINTOSH—Yes. All Macs (laptop and desktop models) now come with technology that puts them to "sleep" during periods of inactivity, saving power and excess computer use.

OS/2—Full support.

WINDOWS NT—No (this has been promised for NT 5.0). Some individual notebook manufacturers are selling customized versions of NT, with power-management support for their individual models.

WINDOWS 3.1—Yes, with additional Advanced Power Management drivers.

WINDOWS 95—Yes.

10. *OS prices for individual client versions for desktop and/or upgrades.*

LINUX—Available fof free on the Net! Distribution on CD-ROM can cost $50.

MACINTOSH—The Mac OS comes preloaded with every Mac. The estimated retail price of the Mac OS 7.6 in Canada is $129 for the CD-ROM version and $159 for the floppy version. Current customers using 7.5.x can upgrade to the new version for $99 for the CD-ROM version and $129 for the floppy version. You can call 1-800-361-6075 and you'll have to have proof of ownership.

If you bought a qualifying Macintosh or Mac OS-compatible computer after November 1, 1996, and don't have the new software installed, you can upgrade for a special price of US$9.95 (plus shipping and handling). For more information, visit Apple's special upgrade site at http://www. macos. apple.com/macos/releases/fulfillment.com or by calling the Mac OS upgrade line at 1-800-335-9258.

OS/2—Upgrade for about $150. Full version $190.

WINDOWS NT—NT Workstation: $390 ($190 upgrade from earlier NT version). NT Server: $1,008 with 5-client license; $1,399 with 10-client license (upgrades from earlier versions are about half those prices); $45 per additional client.

WINDOWS 3.1—If you can find it, about $179 (needs MS-DOS).

WINDOWS 95—Upgrade for about $149. Full version for about $239.

11. *What's being planned for your OS?*

LINUX—Linux is always being updated. It is jokingly referred to as the "patch of the week club." There are always new drivers. Improved Plug and Play.

MACINTOSH—Apple has a two-pronged strategy to move its customer base into a new OS. It will continue, in six-month intervals, an incremental upgrade with its current OS. In less than a year, Apple will also start moving to a new operating system, code-named Rhapsody. Apple says its developers will see preliminary versions of this new OS in a few months.

OS/2—Warp 4.1 due soon, 5.0 next year. More network stuff, enhanced Java, Web browser interface, new file system (JFS).

WINDOWS NT—NT 5.0 is currently beginning beta-testing. Biggest change for home users would be implementation of Windows Driver Model, merging NT and Win95 drivers, along with additional Plug and Play support. This version will add the next version of Internet Explorer (4.0) as an optional desktop (so-called Active Desktop).

WINDOWS 3.1—Windows 3.1 is dead as far as Microsoft is concerned

WINDOWS 95—The upgrade path will eventually merge code bases with NT, although Microsoft claims there will always be the two flavours, at least in the foreseeable future. The interface will change to a browser-based look and feel, with hypertext links, the file system to one that handles large disk drives better (the current FAT disk format wastes a lot of space on big drives). ◆

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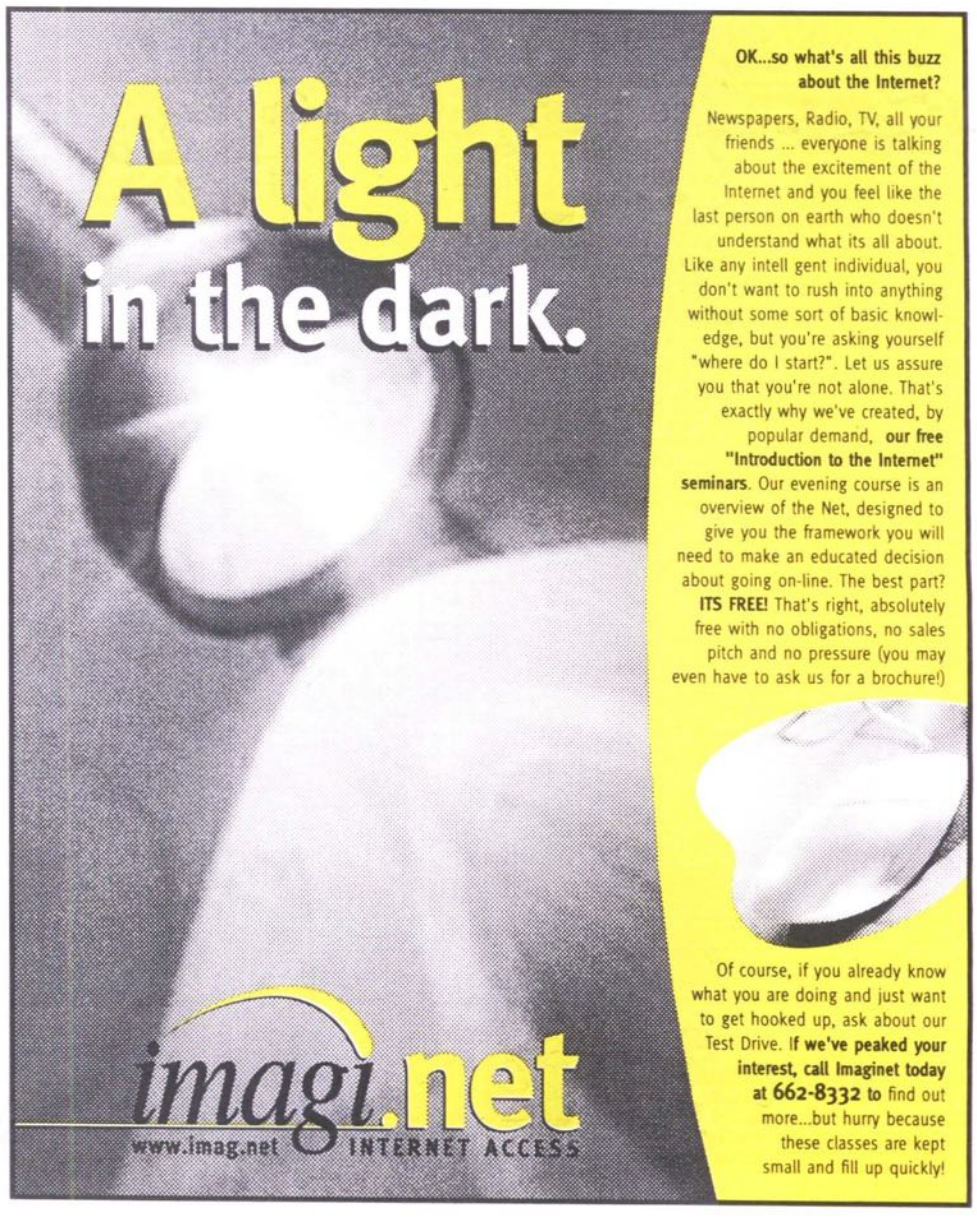

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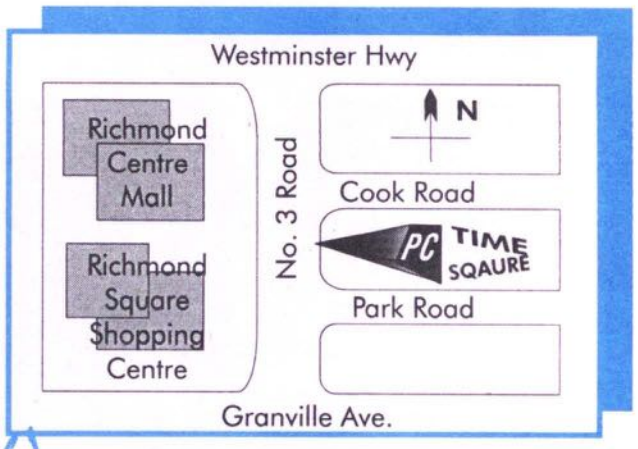

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Adobe *Photoshop* a joy year-round

• • By BRANDI JASMINE • •

All I wanted for Christmas was *Adobe Photoshop 4.0*. When it finally arrived, I was not disappointed: the new version of *Photoshop* clearly is "the world-standard photo design and production tool".

Version 4.0 builds on a solid foundation of past triumphs from Adobe. The program is still intuitive and easy to grasp, despite the wealth of tools placed in front of new users. More experienced users will find that the interface has changed little, but the assortment of toys for "the camera for your mind" have multiplied. *Photoshop* can be either a serious design tool for the committed artist, or an expensive toy for the playful dabbler, but its appeal reaches across the spectrum.

New adjustment layers are one major enhancement in version 4.0. They allow users to apply colour corrections without permanently changing the original. Commands such as levels, curves, colour balance, brightness, and contrast can be changed within the layers, and each will affect the layers below. Adjustment layers can be hidden or discarded as well as moved up or down to affect different layers. It's now a simple one-step operation to flatten layers.

Spinning Web with ease

While *Photo-shop* was originally designed with the desktop designer in mind, it is rapidly carving out a niche with Web-based artists and designers. A series of tools can now automate or simplify steps that must be repeated, as in the case of editing images to be prepared for Web-based animation (animated GIFs).

Photoshop does not offer a compiler for animated GIF production in version 4.0, however. Instead, its action macros record a sequence of editing steps as an Action list. The macro can be applied to another image or a batch of files, which can be exported for use in animation prgrams. In addition, Action lists can be altered with drag-and-drop edits. *Photoshop's* layering protocol simplifies the job of editing frame-by-frame motion, and switching background images.

Version 4.0 adds other features that increase productivity, such as streamlined image retouching, file conversion, filter operations, and batch processing of multiple images. *Photoshop 4.0* doubles the number of artistic filters offered in the program. There are now 95 built-in filters and creative effects.

The new version will also enhance the ability to move across Adobe's proprietary graphics applications, such as *Illustrator* and *PageMaker*. The new version expands common terminology, shortcut keys, menu structure, and the tab palette design shared among Adobe products.

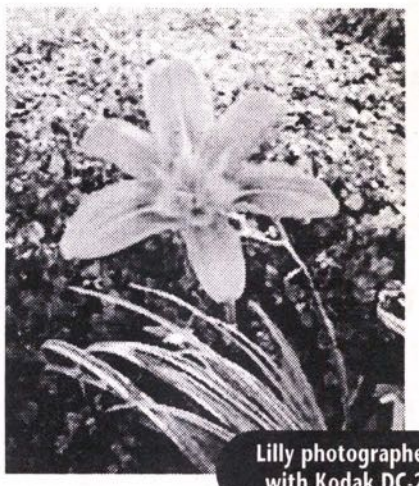
In addition, new file-format support in *Photoshop 4.0* provides users with a broad range of Web file formats, including Portable Network Graphics (PNG), progressive Joint Photographic Experts Group (JPEG), and the Adobe Portable Document Format (PDF). There is a built-in GIF-89a export filter that Webmasters can use to create "invisible" backgrounds for Web-page buttons and graphics. The palette for creating invisible backgrounds permits the artist to define any number of colours as "invisible," thus leading to greater clarity with some borders.

Adobe Photoshop version 4.0 ships on CD-ROM and includes an interactive tutorial CD-ROM, stock photography, sample plug-ins, a digital gallery, and Adobe tryout software. Registered owners of any previous full version can purchase version 4.0 upgrade for $149. Upgrades from *Photoshop LE* to the full version 4.0 are available for $199 (prices are US dollars).

The version 4.0 image-editing upgrade supports the Windows 3.1, Windows 95, Windows NT, Macintosh, and Power Macintosh platforms.

There is one drawback to this powerhouse of a program: it requires a powerhouse computer. Minimum requirements for the Windows version are a 486 with 16 MB RAM and 25 MB available hard-drive space. A Pentium with 32 MB is recommended.

Photoshop is a serious investment for a dedicated artist, and, as we all know, an artist is only as good as his or her tools. ◆



Lilly photographed with Kodak DC-20

Brandi Jasmine can be reached at jasmine@idirect.com

Photoshop 4.0, from Adobe. Windows or Mac CD-ROM. $895. For more information, visit http:// www.adobe.com/

Photoshop plug-ins add fun

By BRANDI JASMINE

When you hear the word "plug-ins," you probably think of Internet browser add-ons such as Shockwave or Java, but plug-ins come for a variety of other programs as well. "Plug-ins" can be made by the manufacturer, but are most often found in the form of unique filters created by individual users. Image-software plug-ins can help you instantly create buttons, or background fills, and while you have to have some imagination, it doesn't take much skill to produce really stunning images once you have a good selection of filters to play with.

If you have *Photoshop 3.0* or lower, your first stop should be Adobe's Web site. Here, you can pick up a conversion program to create transparent GIFs for your Web site, platform-independent non-dithering palettes, and updates to the program. The site is busy and suffers net-crawl, so be patient if you want the toys.

Many of the Plug-ins created for *Photoshop* also work in the shareware alternative, *Paintshop Pro*. You can download *PSP* at CNET's Shareware.Com or on TUCOWS as well. This $69 program functions much like *Photoshop*, but at a value price. Some also work in *Micrographix Publisher* and *Corel Photopaint*, and there are special plug-ins for *Acrobat*.

Fun Factory

My favorite collection of filters is located on the Filter Factory Compendium Site. Tops on the Webmaster's list will be round- and square-button makers, as well as filters to create kaleidoscope patterns, clouds, metallic filters, crystal balls, tiles, mosaics, and more. Filter Factory is a program that helps you create your own filters for *Photoshop*.

Other places to try include The *Photoshop* Sites page, Alien Skin Software, and PC Resources for *Photoshop*. ◆

Mac *Photoshop* users can pick up plug-ins and filters at the Plugpage, including PhotoGIF 2.0, a File Format plug-in for Mac *Photoshop 3.x* that includes full support for creating and editing GIF animations.

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WordPerfect for Mac: The MOR word processor?

• • By LEE LESTER • •

In the days of DOS, *WordPerfect* ruled the world. When Windows roared in, however, *WP* went into a tailspin from which, under the aegis of new owner Corel, it has only just started to emerge.

Curiously, at the same time, *Microsoft Word*, which had held the pole position in the Macintosh world, began to slide. The reason was simple. Microsoft tried to make the Windows and Mac manifestations of its word processor as alike as possible. Offended Macheads didn't want to be like those Windows types, though. For them, there was a better way of doing things. They also just hated the huge amount of disk space and memory occupied by Bill Gates's baby. Many complained that *Word* was s-l-o-w.

When I compared the two products, overall I preferred *WP*. Due to *Word's* links with its *Office* suite companions such as *Excel* and *PowerPoint*, however, and because most of the publications I write for demanded *Word* files (plus some annoying minor glitches in *WP*), I was led to largely remain with the Microsoft product.

Minor changes

Soon after Corel bought *WP* from Novell, it released its version of *WP* for the Mac. Other than a new splash screen shown when the program is launched, little is different from its predecessor.

Novell WP 3.5 was the first Mac word processor to feature the ability to transform documents into HTML format for publication on the World Wide Web or to change HTML documents into word-processor format. It was also the first to include Apple's MacinTalk technology to have all or part of a document spoken by the computer.

Bookmarks linking parts of a document to other places in the same document or in different documents were another neat feature. They can also be linked to WWW addresses. Yet another first was the inclusion of AppleGuide, which leads help seekers through the tasks they wish to accomplish.

Then there was "Make it Fit," which enables a user to stipulate the number of pages a document should occupy with the computer formatting it to do so, and Easy Envelope, which brings an envelope on screen to make placing an address a cinch. As well, *WP's* Grammatik grammar checker, is still the best around.

Kitchen-sink approach

The latest version (also called 3.5, just to make things clear) retains those features. Corel, in its typical fashion, however, has added a raft of clip-art images—5,400—plus 200 photos and 150 TrueType fonts. Its spellchecker features on-the-fly corrections. Also in the package is *MasterJuggler Pro* to manage fonts, applications, sounds, and function keys.

While *WP* comes with a US English dictionary and thesaurus, UK English, German, French, and Spanish versions are freely available on Corel's WWW site.

One oddity I encountered in the Corel version was that adjacent paragraphs were often highlighted in addition to the one chosen, although only the one selected responded to the operational command. Corel says a downloadable fix is available on its Web site. Another curiosity is that *WP* doesn't open documents from as many sources as *Word*.

WP 3.5 is fast and its host of features makes it a prime contender as the word processor of choice for the Mac. It is due to become even better in the spring, when a new version will leverage OpenDoc technology, enabling users to link the power of their processor to spreadsheeting, charting, Web browsing and authoring, and other specialized applications.

WordPerfect doesn't have the sheer power of, say *NisusWriter*. Nor does it have the simplicity of *WorldWrite*. But anyone needing a standalone word processor, without an overwhelming demand for *Word*, (e.g., those who do not need *Microsoft Office* suite links, or have a shortage of disk drive space), should give *WP* a close onceover. ◆

WordPerfect for Macintosh version 3.5, from Corel. $239 ($175 upgrade).

A tale of two office suites: Microsoft Office 97 and Lotus SmartSuite97

Perhaps the single most common application on computers today is an office suite—a collection of common business programs from a single company. By bundling a word processor, a spreadsheet, a presentation-graphics program, and perhaps a database, companies hope to lock customers into sticking with a single product line.

• • By ALAN ZISMAN • •

There are three contenders: Microsoft has built up a comfortable lead in suite sales with its *Microsoft Office*, holding an estimated 85 per cent of the current market. Lotus's *SmartSuite* has about 5 per cent, while suites featuring *WordPerfect* and other products initially developed by Borland (*Quattro Pro* spreadsheet and *Paradox* database), now owned by Ottawa's Corel, have what's left. And it's a big market—some estimates suggest that *Office* brings in $2 billion in annual revenues to Microsoft.

January brought a new version of *Microsoft Office*, in a number of versions, while *Lotus SmartSuite 97* has just become available. Let's take a look at the latest contenders.

They look alike, they act alike...

The stiff competition for office-suite customers has produced products with a lot of similarities. Both suites are for Windows 95 and NT only—users of other operating systems and computers are left out in the cold, having to make do with older versions. Mac users will get an equivalent version of *Microsoft Office*—eventually. And despite Lotus's IBM connection, the new release of *Lotus SmartSuite for OS/2*, is more comparable to last year's *SmartSuite 96*.

Both suites are big products—requiring a powerful processor, lots of RAM, and lots of hard-drive space. Think Pentium and 16 MB of RAM as the minimum acceptable platform.

Both products add Internet features, and support for workgroups—teams working on a common project, and as a result, sharing documents. Both offer an increasingly standardized interface across all suite members, and a common macro language, Visual Basic for Applications in *Microsoft Office*, and LotusScript in *SmartSuite 97*.

Along with the Corel products, each increasingly has "borrowed" the best ideas from its competitors. The word processors all feature real-time spell checking, my favourite feature of this generation of software, where spelling errors are highlighted as you type (a feature that originated with *Lotus Word Pro*). The spreadsheets all offer 3D worksheets (from *Lotus 1-2-3 version 3*), with tabs to easily switch from page to page (from *Quattro Pro*).

SmartSuite for teamwork

Even identical twins have their own personalities, however.

Despite its low market share, *SmartSuite 97* has a number of strong features. *WordPro*, its word processor, offers easier page-layout features than any of its competitors. This version even allows text to flow between frames—like a desktop-publishing program. And this version has been optimized, improving the performance of earlier versions.

1-2-3, the venerable spreadsheet, has been modernized as well, and finally has been upgraded to a fully 32-bit version. There's a nice new AutoTotal feature—just type the word 'Total' in a cell, and a sum formula will be automatically created—and it's generally the right one, too.

Lotus Freelance remains perhaps the easiest presentation graphics program in any of the suites, while still offering a range of power features. Its range of SmartMasters makes it simple to create an attractive slideshow.

Unlike the competition from Microsoft and Corel, there is only one version of Lotus's suite—users don't pay extra to get a database. *Approach* is also designed for ease of use, but in this case trades some potential power to be the friendliest database in its class. Still, it's probably powerful enough for most users, and is well linked to *1-2-3* and makes an attractive front-end for large databases housed across a network or on a mainframe. Also attractive and easy to use is the *Organizer* personal information manager, with its intuitive "day-timer" look.

All products share an Infobox feature, a quick and easy way to get important information via a small, tabbed, floating dialogue box that conveniently holds the most used properties for whatever you're working on.

Lotus has found the Internet. All applications can save in HTML (Web page) format, and can save to an Internet FTP or Web site. But perhaps more important to Lotus are links to the company's *Notes*—a powerful, network-based environment for sharing information and collaborating on projects. All applications are designed to work well with *Notes*, and offer a wealth of functions to support workgroup computing, such as revision control.

SmartSuite has some attractive individual applications and is a strong choice for users on *Notes* networks, or working on team projects. A fully functional, 45-day time-limited trial version is available for free from Lotus; contact them at http://www.lotus.com/

Microsoft Office: The one to beat

Because of its dominant role in office-suite sales, a new version of *Microsoft Office* is big news. *Office 97* effectively defines this generation of suite software. It comes in a variety of versions, including a standard version, a professional version that adds the *Access* database, a developer version, and a new small-business version that drops the *PowerPoint* presentation program in favour of a copy of the *Publisher 97* desktop-publishing program. All versions also feature the *Word* word processor and the *Excel* spreadsheet.

There are two major features that will be new to long-time *Microsoft Office* users.

Office Assistant is a small, on-screen box featuring a cartoon character (by default, a paper clip, but optionally an Einstein clone, or other characters). It keeps an eye on your work, and offers tips when it thinks appropriate. I generally find such features more annoying than useful, and tend to turn them off. I have been finding OA's paperclip surprisingly likable, however—I think I'll keep it around.

In usability tests, Microsoft found that users often were unaware of potentially useful features in the software that they already owned, such as *Word*'s business-letter wizard. The Office Assistant notices when you start to type a letter, offering to run the wizard. Score a point for finally making full-functioned software more approachable.

The other big addition is *Outlook*—a much more powerful personal information manager than the *Schedule Plus* program included in older versions. Adding contact-management and even project-management features, it could serve as the centrepiece on some users' computers—they can attach shortcuts to documents to the calendar or address book, keeping contacts, appointments, and even documents connected and easily accessed. It even does e-mail.

continued on page 51

info box

***Office 97*, from Microsoft. Windows 95 and NT CD-ROM. Standard: $689 ($249 upgrade); Professional: $829 ($434 upgrade).**
For more information, visit http://www.microsoft.com/

***SmartSuite97*, from Lotus. Windows 95 and NT CD-ROM. $599 ($225 upgrade).**
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Sweet 16

briefs

• • Compiled by KEVIN LINFIELD • •

MicroNet claims that it is the first company to offer 16X-speed CD-ROM drives for Macintosh and PC computer systems. The ADVCDE16E provides high-speed access times of 150 ms, data transfer rates of up to 2.4 MB, and has a suggested price of US$275. Contact: http://www.micronet.com/ or (714) 453-6100.

Say what?

Transparent Language Inc have released *Easy Translator for Win-dows*, a versatile translation software program that quickly translates text, e-mail, and Web pages in Spanish, French, and German to and from English. It has a suggested price of US$49. Contact: 1-800-752-1767 or http://www.transparent.com/

See Bill Gates 365 times a year

Vision X Software has recently released the "365 Days of The Secret Diary of Bill Gates," computer calendar, which features the personal journal of the "richest most powerful man in the world." Download a free copy of this or other daily calendars from http://www.visionx.com/

CanTax final version appears

CanTax 1997 Final Version is now shipping. This multimedia CD-ROM includes tax tips and step-by-step guidance on completing your tax return. MSRP is $36.95, or free to purchasers of the Early Filing Edition or Tax Tutor. Contact: http://www.cantax.com/ or 1-888-317-9999.

Keeping secrets

Designed to prevent unauthorized parties from tapping into a user's "secret stuff," *Norton Secret Stuff* allows users to send secure files to anyone, anywhere. Available for Windows 3.x, 95 and NT, check it out at

http://www.symantec.com/nss/

Be free

Miller Freeman Books has released *FreeDOS Kernel: An MS-DOS Emulator for Platform Independence & Embedded Systems Development*. The book and companion disk include the full source code for DOS-C, a fully functional 80X86 kernel, and support files. Designed as an educational tool, it has a MSRP of US$29.95. ISBN 0-87930-436-7. Ask for it at your local bookstore, or call R&D Books at (913) 841-1631.

Sight solutions

Vision-care specialists Eye2Eye Inc. have introduced *Solutions In Sight*, the first comprehensive visual ergonomic software and remedial treatment program alleviating Computer Vision Syndrome. *Solutions In Sight* maximizes a computer user's visual comfort by utilizing the Color Optimizer software (for better screen colour choices), Vision Break software (to prompt users to take a visual break), and more. Contact: http://www.eye2eye.com/ or 1-888-EYE-2-EYE.

New Mac *Pagemaker*

Adobe has released *Pagemaker 6.5* for the Macintosh and Power Macintosh computers. Featuring new tools for online and print publishing, MSRP is US$895, but registered users of any version can upgrade for only US$99. Contact: http://www.adobe.com/ or (206) 470-7268 or 1-800-42-ADOBE.

continued on page 47

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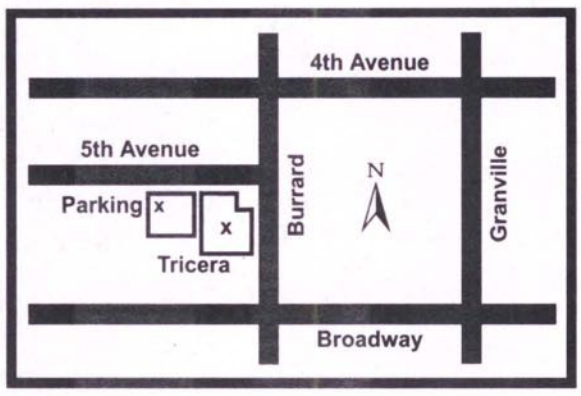

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Between March 12 and April 30, purchasers of a Compaq LTE 5380 desktop PC (list: $7,333) or Compaq LTE 5400 notebook PC (list: $7,733) will receive a free Compaq PC Companion Model C120 Personal Digital Assistant as well. The C120, which has a list price of $739, features 4 MB ROM (read-only memory) and 2 MB RAM.

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http://www.canadabooks.com/

Canada's Internet Bookstore, offering a catalogue of over 175,000 titles featuring an extensive list of Canadiana, as well as books from the United States and the UK.

http://www.viarail.ca/

Offers Internet users the ability to reserve VIA train tickets online for pickup or mail delivery.

http://www.teensizzle.com

TeenSizzle magazine, the hot young magazine for young teens on the Internet. Featuring articles, fiction, art, ideas, and hints for, by, and about teens.

Hot new Web sites

http://www.globodex.com/

A new Internet search engine for Canadian businesses. You can even add your business for free!

http://www.etrade.com/

This site offers members a low-fee method to electronically purchase stocks and mutual funds

http://www.readersdigest.ca/

The new Web page of the famous *Readers Digest* publication, claiming to entertain, inform, enrich, and inspire the viewer/ reader.

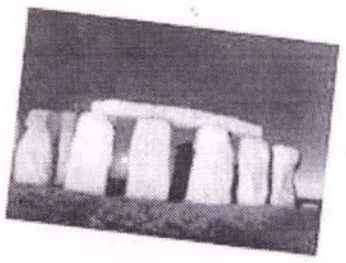
http://www.stonehenge-association.co.uk/stonehenge/

Lots of information on Stonehenge, with a link to the interactive version of the World Heritage Site featuring a virtual reality Stonehenge tour.

http://www.number-10.gov.uk/

Pictures, audio, and text on the British Prime Ministers office, as well as historic speeches and British press releases.

http://www.achoo.com/



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Pass the chips!

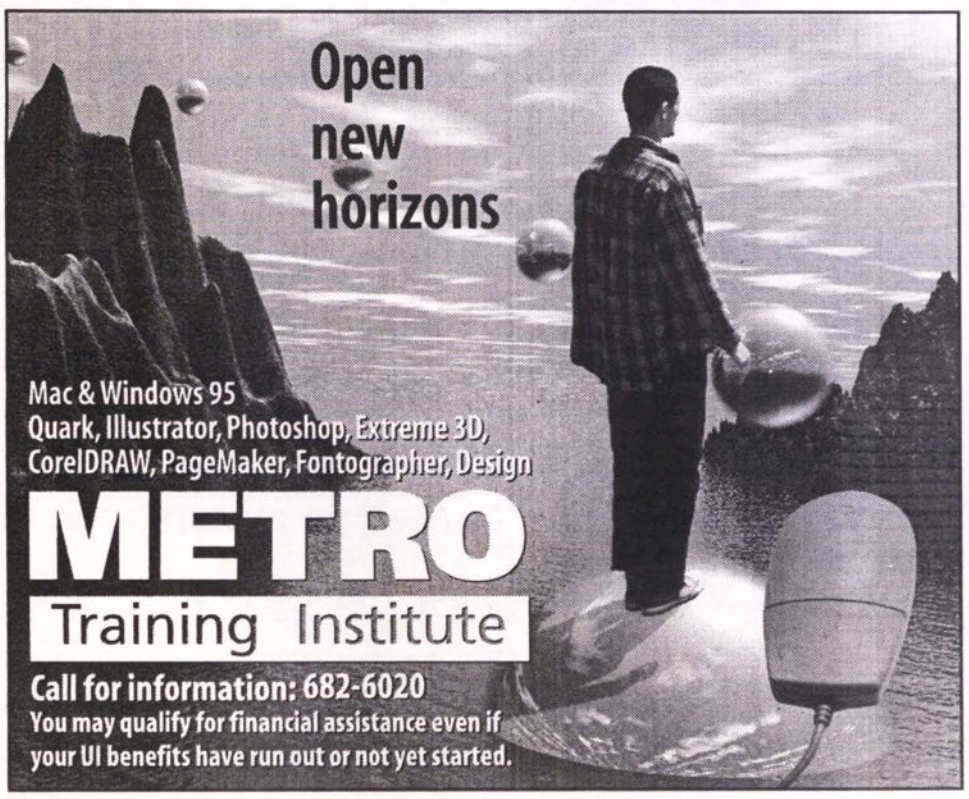
Intel Corp. has introduced the Pentium processor with MMX technology—Intel's new technology for improved performance on multimedia-rich applications. Intel claims that the MMX chip will enable higher quality graphics, video, and audio. Access Intel information via the WWW at http://mmx.com/ or http://www.intel.com/pressroom/

Speedy notebook arrives

Eurocom Corp. is claiming to be the first company out the door with a 200 MHz MMX Pentium notebook computer. The Eurocom 6200 Super Notebook has a suggested retail price of Can$5,600 and features 32 MB of RAM, 8X CD-ROM drive, 1.3 GB hard drive, and a 12.1-inch TFT Active colour display. Contact (613)-224-6122 or http:// www.eurocom.ca/

WordPerfect for UNIX

Corel Corporation is now shipping *Corel WordPerfect 7 for UNIX* (including AIX, HP-UX, SunOS, and Solaris). Available for both character terminals and X Window systems, it is currently available in English only. Suggested list price is US$495, with upgrades from US$249. For more information, visit http://www.corel.com/ or phone (613) 728-8200. ◆



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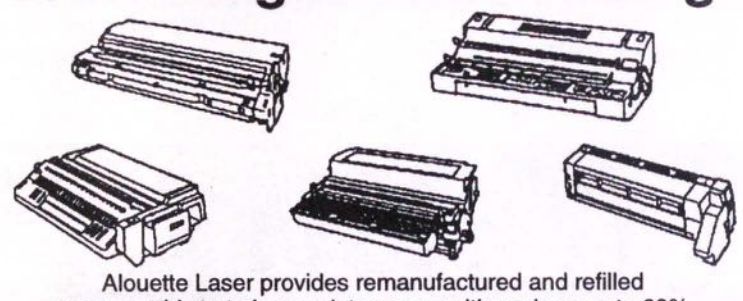

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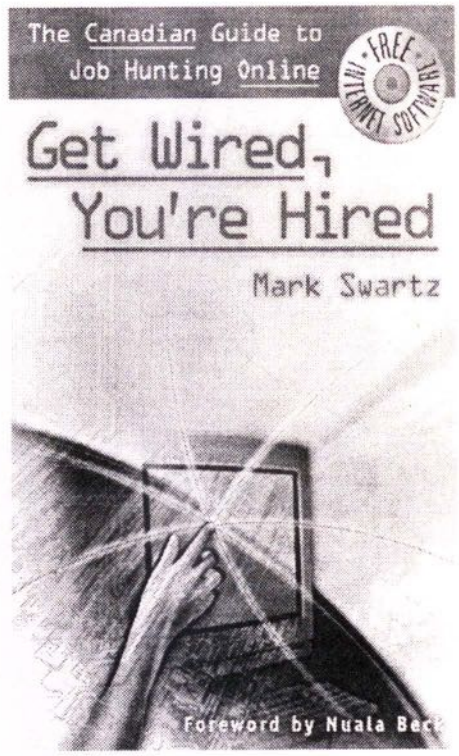

In *Get Wired, You're Hired: The Canadian Guide to Job Hunting Online*, Mark Swartz offers a much-needed resource to anyone who wants to use the online world to find a job. More importantly, he offers a *Canadian* perspective on what the tools are, how to use them, and where to look for potential employers.

Swartz is a career consultant whose exploration of online technologies is solidly grounded in an excellent understanding of what a high-powered job search needs. This is perhaps the book's main strength—

continued on page 49

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Get Wired You're Hired ...

continued from page 48

that the Net is seen as a tool (albeit a very powerful one), rather than as an end in itself. In that regard, Swartz is perhaps on the cutting edge of a new breed of Net users, who will accept the Net as an aid to daily living.

Get Wired, You're Hired is laid out in four parts. Part One offers a close look at the effect of a rapidly shifting economic climate and the changing nature of work itself, an examination of how these changes have affected the ways in which people look for work, and what Swartz calls a "basic primer" of online work-search tools.

Parts Two and Three get down to the nitty-gritty. First, Swartz guides the reader through a quick course in career planning, including pointers to online career tests and self-evaluations. Then, there are detailed markers to how to create marketing materials and target those specific industries and companies relevant to the reader's job search.

Part Three focuses on networking into "the hidden job market" that, according to Swartz, comprises up to 80 per cent of all job opportunities, explains how to job hunt online (using the Web, mailing lists, and Usenet newsgroups), and explores the option of self-employment.

Better learn to surf, Charlie

Part Four is about "Staying Wired and Hired," the author's exhortation to stay in touch with constant change and new opportunities via the Net. True to the spirit and title of the book, a "Get Wired, You're Hired" Web site will give readers an updated list of Internet-based resources, technology updates, and a bonus chapter to the book.

The book is a clearly written and comprehensive guide to a world that's new and somewhat threatening to many. It deserves pride of place on the bookshelf of anyone who's serious about making wise career choices. ◆

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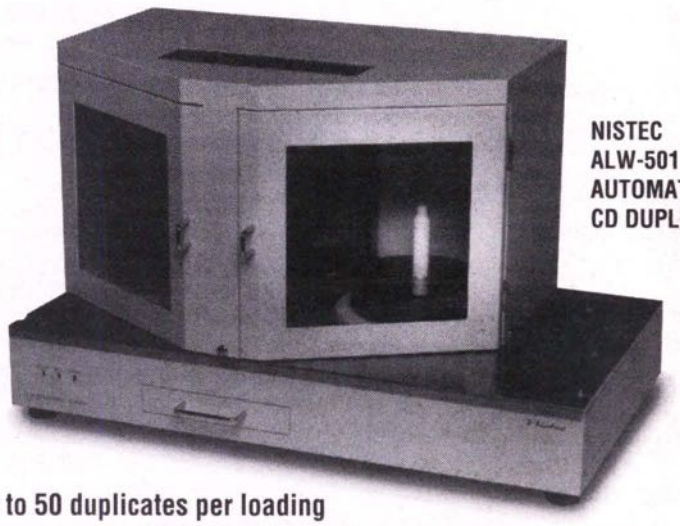

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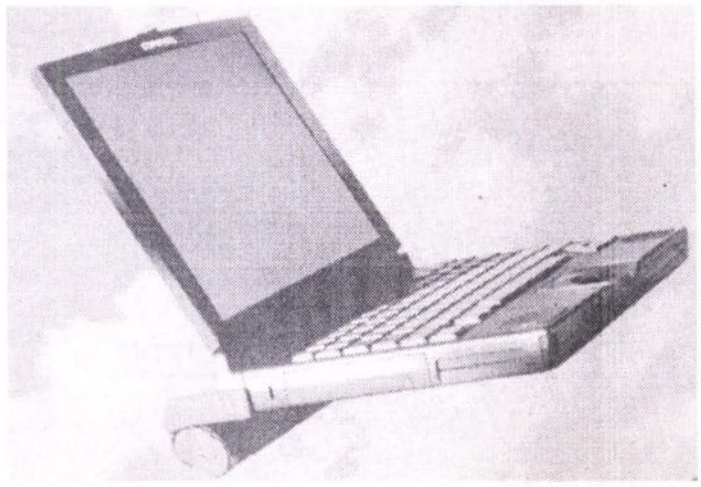
Slim notebook can bulk up as needed

Lately, notebook computers have been getting bulked up like Arnold Schwartzenegger. You need Arnie's muscles to haul them around, too. The Compaq Armada 4120T tries to take some of the load off your shoulder with a modular design that starts slim and lets you add pieces as required until you have a loaded (and hefty) powerhouse.

• • By LYNN GREINER • •

The basic machine is under 2 inches thick, and weighs less than 5 pounds. You add a pound by attaching a carrying handle that doubles as both a handy swivel-down foot and the holder for the main battery, a cylinder similar to that pioneered by Digital in its HiNote series. An optional clip-on multimedia expansion unit brings the beast up to a desktop equivalent in power, and 8.2 pounds in weight. And so on.



The review unit consisted of the base computer, with included carrying handle, that's no slouch in the power department: a 120 MHz Pentium with 1.08 GB hard drive and 16 MB RAM (expandable to 48 MB). It's a large, flat box (11.4 x 10.2 x 1.49 inches), with an 11.8-inch TFT screen that displays 64,000 colours at 800 x 600 resolution. On an external monitor, it's capable of 1024 x 768. The image is bright and clear, as one would expect of a TFT screen, and MPEG capability is built in.

No rest for the wicked?

Counter to the current trend, there's no palmrest to speak of, just the space below the keyboard where the touchpad pointing device resides. Stereo speakers live at the bottom right and left corners of this area as well. If you hate touchpads, this one can be user replaced with an optical trackball.

The keyboard has large, flat keys with a fairly firm touch (harder than I like, but preferred keyboard feel is a personal thing). People with large hands will enjoy this keyboard, while small-fingered folk may find distances to peripheral keys excessive. Four user-programmable buttons can be either the special Windows 95 keys, or can be used to launch frequently used applications.

There are indicator lights for power and so forth, but disk activity lights are omitted. Ports includes the usual set, plus NTSC/PAL output for TV or composite monitors.

The Armada gets about 2.5 hours use per charge from its Lithium-Ion main battery, but you can extend that by substituting a second battery for the floppy drive (yet a third fits into the CD expansion unit). You can still use diskettes, too, by attaching the floppy drive to the parallel port with an optional cable.

The manual is especially good, with a full explanation of system error codes, pinouts for all ports, troubleshooting instructions, and operating instructions for both the computer and peripherals.

Overall, the Armada 4120T is a thoroughly decent machine for the busy road warrior.◆

info box

Armada 4120T notebook computer, from Compaq. $3,999. Comes with Windows 95, *Netscape Navigator*, ESS Audio Rack, *Lode Runner*, Take Your Best Shot, LapLink, Just Connect, and Compaq utilities. For further information, visit Compaq's Web site at http://www.compaq.com/

A tale of two office suites ...

continued from page 44

Of course, all the included applications have also been updated. The OfficeArt drawing module now does all many users will need, while *Word*'s new table features are especially nice: you can now literally draw a table. There's more autoformatting, and a real-time grammar checker. *Excel* has improved its natural language abilities: you can make a formula that reads "Profit=Revenue-Expenses." It adds a mapping feature, catching up with *Lotus 1-2-3* in that regard.

Again, Internet support is part of all programs—all can save in HTML, or embed Web hotlinks. Applications support group projects, although *Lotus SmartSuite*'s groupwork features are more powerful.

Word has learned to control for the increasingly common macro viruses—an important security improvement. Unfortunately, new features in all the programs have resulted in new file formats as well; you can save in the old file formats, for compatibility with users of the older versions.

A slick update, *Office 97* is still the suite package that defines its product category. ◆

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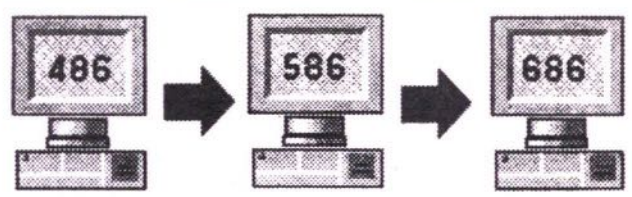

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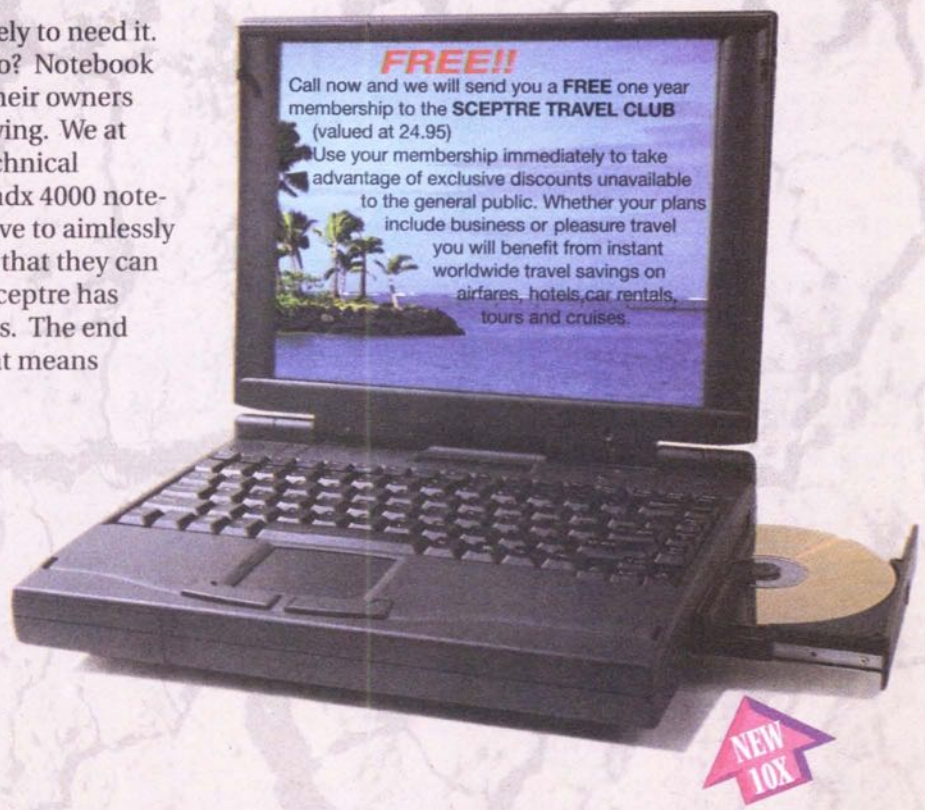

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• • By DAVID ROSEN • •

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A musician's treasure trove

• • By DAVID ANDERSON • •

Here are three very distinct ways to use the capabilities of the CD-ROM format to celebrate music.

First, let's look at *New Beat Trancemission* for Windows 95, by Microforum. This is a fascinating collection of sound generators and editing applets, joined together in a very sensible new-age environment. The basic idea of this program is to create dance rhythms like those heard in today's cool electronic dance clubs.

The CD-ROM comes with a large library of effects, drum rhythms, conga patterns, two- and four-bar bongo fills, scratch riffs, organ, synth, guitar, and electric bass patterns. The user gets to call them up in prerecorded songs, and play mix engineer, or it is possible to call up each individual voicing or sound module, and sequence it into a completely original dance mix.

The main mixing console is difficult to describe, except to say that there are 20 buttons, with on/off LEDs, which control the presence or absence of any given sound. There are also four play/record controls, which permit the multitracking of up to four simultaneous tracks in one song. There are no Microsoft-type menus, but the controls are intuitive enough to make sense after a while.

Basically, you load sound files, save the

layouts, play them in a sequencer, and save the resulting mix.

If this was all it did, *Trancemission* would be a must-have for any electronic musician with a Pentium-class machine (16 MB RAM minimum) and a fat-sounding audio system, such as a wave-table card and a sub-woofer.

There's more, however. *Trancemission* happens to contain a very sensible drum machine, with oodles of effects and half-decent drum sounds. There are three snare sounds, three bass drum sounds, and some very decent hi-hat sounds. The interface is an education in music theory just looking at it. The sounds are punched in or out with a mouse click. Save the pattern as a WAV file, and pick it up in the main console as part of a new dance mix.

Still not impressed? Then open the drum pattern with Sound Warp, a WAV file editor, and add echo, or reverse flange, or both. Or pick up a microphone, and create a voice pattern to sequence into your masterpiece. All in all, this is one adventurous piece of code, and the sounds are hot enough to get your old stereo out of the closet and plug it in to your sound card. Give yourself a real blast!

Take another little piece of my hard drive, baby (oops, wrong Joplin)

Next comes *Total Joplin*, by Sunhawk Corporation of Seattle, Washington, also for Windows 95. This is a very handsome collection of music, history, images, and a bit of theory concerning the ragtime piano music written by Scott Joplin. The visuals are beautifully keyed to the era, and the interface is smooth as silk.

The program contains an overview of the history and basic structure of ragtime, as well

continued on page 54

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A musician's treasure trove ...

continued from page 53

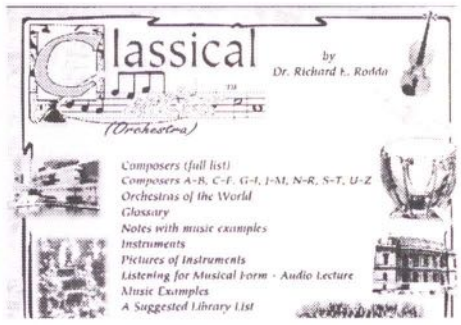
as a biography of Joplin's life and times. The principal feature of the disk is the play list of songs. Each song plays in its entirety, with great sound, and comes with liner notes and, where available, the original sheet music covers, which are truly beautiful on their own. I have captured several for wallpaper.

In addition, the program contains the fascinating Solero Music Viewer, also by Sunhawk, which loads any song and plays it with a bouncing ball, at any tempo, and prints it out flawlessly. I asked my piano-student wife to look at it, and she was transfixed, watching the bouncing ball (a dot, really) as it slid through Joplin's arrangements. As with *Trancemission*, this program has the ability to support the learning of music theory. You might know what a drag triplet is, but when you can see and hear one being played on piano, you can easily see how it is written, and how it is played correctly.

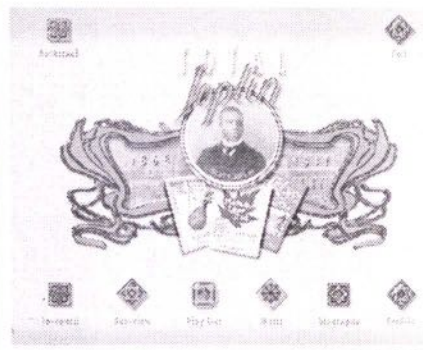
Needs tuning

Finally, the bottom-of-the-barrel award goes to a real heavyweight of Windows shovelware, *Classical Notes*, by Dr. Richard E. Rodda. Dry, boring, and packed with text, I predict that this disk will die a quick and painless death.

Classical Notes is an attempt at an encyclopedia of classical music, with some sound samples and a few weird photographs of drum parts and French horns. Instead, it only shows how far we have come since the days when CD-ROMs first came out.



Any Microsoft classical music CD-ROM is stunning next to this earnest endeavour. *Classical Notes* contains the worst sound I have ever heard, but the sound clips are only intended to motivate the music student to seek out the real thing.



Total Joplin.

If *Classical Notes* was my first contact with classical music, I would never have thrilled to the soaring melodies of La Boheme, or trembled at the majesty of Stravinsky. Please, Dr. Rodda, upgrade your sound card!

David Anderson is a part-time casual musician, and an elementary-school computer teacher. He can be reached at david_anderson@mindlink.bc.ca ◆

info box

***Classical Notes*, from Hopkins Technology, LLC. Windows CD-ROM. $44.99.**
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Anybody with an interest in Canadiana is in for a real treat with the *1997 Canadian Encyclopedia Plus*. It provides access to the complete text of *The Canadian Encyclopedia, The Columbia Encyclopedia, Fifth Edition* (for access to international articles and stories), *The Gage Canadian Dictionary*, and a thesaurus.

• • By JEFF BUCKSTEIN • •

The software is user friendly, with a "smart search" that can be organized by simply typing in a topic of interest; the program then scans to locate related articles from the encyclopedia, or, if applicable, one of the approximately 400 articles available from links to *Macleans* magazine. The software also features a chronological Timeline, with over 3,400 references, from the time dinosaurs ruled the Earth, to the 1996 calendar year, from which related references and articles can be recalled.

Moving pictures

The media browser is perhaps the most exciting aspect of this software. It enables the user to access over 4,200 sundry items, arranged as either maps, graphs, photographs, or audio/visual clips. The film clips date from the First World War to the present day. For instance, you can relive Donovan Bailey's world record 100 metre dash in the 1996 Olympics, or watch Paul Henderson's winning goal against the Soviet Union in 1972.

For entertainment, listen to a comedy sketch from Air Farce, or Wayne and Shuster, or a teenaged Paul Anka singing "Diana." In many instances, voice recordings can be activated over still photographs. For instance, viewers can also listen to the voices of Margaret Atwood and Alice Munro, as they read from their novels.

One tip, though. When installing the Quick Time for Windows option, which activates the multimedia capability, I strongly recommend enacting the calibration (an optional exercise) to ensure your film stays centered on the screen. I failed to do that during my first installation, and as a result, lost the synchronization of my picture on the screen, forcing me to reload the software.

The 1997 Canadian Encyclopedia Plus is an excellent piece of educational software for all ages.

Jeff Buckstein is a freelance writer. You can write to him at JBuckst358@aol.com ◆

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Updating your software

• • By STEVE BAIN • •

In today's software world, keeping pace with software improvements usually means hunting for updates and patches.

Updates normally result from two things: new or changing technology (read: new operating systems) or inadequately tested programming code (read: sloppy software) allowed into production for one reason or another. Updates are rarely "gifts" from developers for being a good customer. And, for those users who think they'll simply load their software and sit pretty for years, think again. Today's computer technology developers have reduced yesterday's years to months or even weeks.

Update, upgrade, patch, or build?

There was a time in the early days of mass-market software when updates were generated from massive amounts of negative feedback (complaints) about a program's inadequacies. Today, it's not uncommon to see a program update—or maintenance release—shortly after the software hits the shelves. While full versions are measured in full increments (version 1.0, 2.0, and so on), maintenance releases are often measured in decimal increments.

Occasionally developers will release software numbered in a half- or third-version increments (i.e., *Pagemaker 6.5* or *Quark XPress version 3.3*). These are referred to as "upgrades" instead of updates, and, unfortunately, upgrades require a purchase.

Other companies continue to develop their software even after the final code has gone out the front door to production, and hide their maintenance handiwork by disguising updates as production improvements in the form of new software "builds." A build is the most recent version of code put into production. Recent software builds can often be obtained directly from the developer, and usually take the form of what is referred to as a "patches."

How is updating done?

If you lack Web access, software patches can be as simple as a toll-free phone call away, but the key is in knowing if an update is even available. Without an Internet connection, you could end up waiting weeks or even months for a disk to arrive by regular mail. For Web-equipped users though, nearly all updates are made available through software company sites.

Downloading a patch is usually a simple task for minor software changes that involve short download times. The trouble is in finding them. Companies don't generally like to broadcast fixes to their products and the links to finding updates are often deeply buried in technical-support areas of Web sites.

Patches are nearly always compressed using some form of compression software utility and can be expanded without having to own the utility. Self-extracting files are often the case for updates and usually involve file formats such as SIT for Mac or ZIP for Windows software. Once these compressed files have been downloaded, it's usually a simple procedure to expand them into a new folder and launch the update executable.

What's in store?

The ability to distribute software updates or revisions electronically via the Internet or intranet networks is an appealing prospect for developers. It allows quick and easy distribution of software changes. Perhaps in the very near future, having to hunt for patches on the Internet will be become a thing of the past.

Roughly a year ago, a company called Marimba was formed by four ex-Sun Microsystems employees, who were key players in the invention of the Java programming language. Marimba has since masterminded new technology they call "Castanet," which is attracting the attention of major developers such as Netscape, Corel, Lotus, and Macromedia.

Castanet works similarly to Web-site and browser technology, but with a slight twist. The software uses a "transmitter" to push data out online and uses a "tuner" to receive it. Castanet uses "channels" to which users can tune. The beauty of this channel/tuner exchange is in its time-saving compression and Java-based code.

Picture this. While working, you select a certain menu item—something like "Check for Updates" or CTRL+SHIFT+U. Your software automatically connects to the Castanet channel, tells the channel who you are, checks for any updates, and asks if now is a good time. From there, updating is seamless and automatic, including logging off.

For developers and users the implications are far reaching. Marimba technology enables developers to get much closer to their customers and vice versa. Rather than ship a maintenance release every three months, the software can either be prompted by the user to check for updates on a particular server and check for updates at specific time intervals. Or the server can "push" updates directly to clients as they become available.

A secondary but intriguing aspect of Marimba's technology is its ability to provide "pay-per-view" online services. Essentially, this means that users can "order" data from a server in small or large chunks. Features could be made available that weren't there when software was initially released, and users could be charged online for these "extras."

Whether or not this technology spreads to affect users of code-heavy applications remains to be seen. In light of its increasing popularity, however, Marimba will undoubtedly be coming to a computer near you.

For more information on Marimba, Castanet, or other products, visit http://www. marimba.com/

Steve Bain is a high technology writer in Vancouver, Canada. Send news, product tips, or comments to Steve@helix.net ◆

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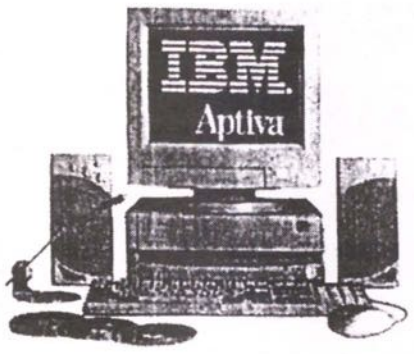

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Conducting business on the World Wide Web

New Business

Paul Lima

Much has been written about the Internet and World Wide Web as a place where one can gather information on virtually any topic, including running a small business. Millions of individuals have set up home pages on the Web and both small businesses and major corporations (banks, trust companies, beer companies, car manufactures) have Web sites.

There are over 300,000 Web sites, 40,000 of them commercial, and the numbers are growing exponentially.

There are over 300,000 Web sites, 40,000 of them commercial, and the numbers are growing exponentially.

Setting up an effective Web site involves renting space on a server or from an Internet service provider (ISP), designing the site, writing copy and creating graphics, coding pages to display properly in Web browsers, uploading files to your site, and maintaining the site.

Whether you do it yourself or hire a WebMaster, this process takes time and money and begs two questions: Is there a market out there? Are businesses making money off Web sites?

In Canada, 6.5 million Canadians are online, with 63 per cent of Canadian homes having some sort of access and more than a third of Canadians having tried it. Canadian Web surfers are divided into a 60/40 male/female ratio. The average age is 35 years. They have an above-average income, education, and credit status. All in all, what might be the perfect consumer niche.

While the number of Net users is a small fraction of consumers at large, businesses can cut communications costs and create product awareness on the Net.

Forget the phone

Rather than playing telephone tag or paying long-distance charges for phone calls and faxes, many small businesses use e-mail to communicate with customers, vendors, and suppliers. Their Web sites enable potential customers to access answers to frequently asked questions about products, services, pricing, and support. Web sites can also lower promotional costs—as long as a company's potential target market is Web savvy.

Examples? Amazon.Com, the world's largest bookstore, does not have one physical store. It does, however, have 1 million books in an online catalogue. CDNow.Com had a basement start, but tripled its revenues to $6 million last year and had 18 per cent net (no pun intended) margins.

Software Online Inc. is located in Brampton, Ontario, but the company sells computer software and hardware across Canada. The company (located at http://www.softonline.com/) offers 20,000 computer products.

"For us, coming to the Net wasn't a supplement to other business methods. It was what the business was designed for," says Jon Dearden, a partner in Software Online. "Using the Internet will allow us to build a big business, not a big headquarters."

That reality of conducting business on the Web also includes export opportunities, since the Web transcends political borders and geography. Dearden has sold software to consumers as far away as the UK and New Zealand.

Competing with everyone

Due to free trade and global competition, companies have to be "good enough to stand up in the world market, not just compete in their own back yard." And since they have to be globally competitive to survive in their local market, Blaber suggests they look at exporting as a means to expand their business, especially if they have developed niche-product or -service expertise.

Exports will not occur just because a company has e-mail and is able to set up a Web site, Blaber cautions. "High tech is a help, but it's not a substitute for building relationships and understanding cultures."

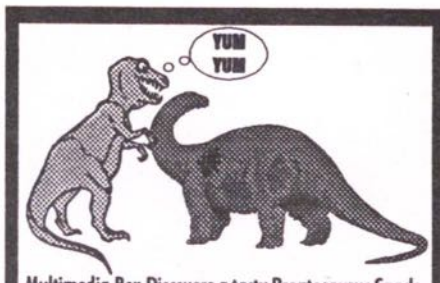
On Trac Inc. has created a Web site (http://www.ontrac.yourku.ca/) to help smaller businesses establish the relationships Blaber refers to.

"Many Canadian products and services don't reach foreign markets because Canadian companies are not trade ready," says David Sadleir, On Trac's president.

The On Trac site introduces businesses to the import/export process. While there is a great deal of free information available, On Trac charges a monthly fee for access to the full database and to list companies by product or service category so businesses in other countries can make e-mail contact with potential Canadian partners.

So there it is: the world at your fingertips. Just don't expect to conquer the intricacies of marketing on the Web in a day.

Paul Lima (tiko@idirect.com) is a freelance writer specializing in high-tech and communication issues. ◆



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Quicken Deluxe 5.0	29
Quicken Financial Suite	39

KEWL GAMES

11th Hour	39
3D Ultra Pinb.Creepnight	29
7th Guest	24
Aces Collection	29
AD & D Core Rules	79
AH-64D Longbow	54
Art of Flyfishing	59
ATF	49
Beast Within	33
Caesar 2	24
Civ 2 Scenarios	39
Civilization 2 Toolkit	24
Civilization II	54
C&C Tactical Operations	24
Command&Conquer Tools	24
Daggerfall	58
Decent 2 Infinite Abyss	39
Diablo	49
Dragon Lore II	54
Duke Nukem 3D English	44
Duke Nukem Atomic	59
Duke Nukem Plutonium	39
F-22 Lightning	54
Flight Unlimited Win 95	59
Flying Corps	59
Full Tilt Pinball	23
Grand Prix 2	55
Heroes of Might& Magic II	53
Kings Quest 7	22
Kings Quest Collection	32
Leisure Suit Larry Col	55
Leisure Suit Larry 7	55
Lighthouse	34
Links LS	52
Lode Runner on line	29
Lords of Realm 2	58
Magic The Gathering	54
Master of Orion 2	58
Max	55
Mech Warrior 2	29
Mech Warrior 2 Win95	29
Monty Python Holy Grail	48
Monty Pyton Comp Waste	34
Myst (Win 3.1)	34
Nascar II	54
NBA 97	54
Need For Speed SE	47
NHL 97	57
Phantasmagoria	34
Phantasmagoria 2	54
Police Quest Collection	34
Privateer 2	69
Quake Full version	55
Quake Toolkit	22
Red Alert	62
Road Rash	52
Silent Thunder A-10 II	32
Spycraft	23
Star Control 3	54
Star Wars archives vol II	69
Super EF-2000	54
Swat	34
Syndicate Wars	53
Tie Fighter Collection	39
Time Lapse	54
Titanic	54
Tomb Raider	51
Torrins Passage	27
Trophy Bass 2	54
Under a Killing Moon	34
US Navy Fighter 97	59
Virtual Karts	34
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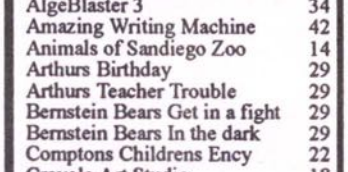
Zork Nemesis	29



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AlgeBlaster 3	34
Amazing Writing Machine	42
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Arthurs Teacher Trouble	29
Bernstein Bears Get in a fight	29
Bernstein Bears In the dark	29
Comptons Childrens Ency	22
Crayola Art Studio	18
DK Encyclopedia of Science	43
DK History of World	43
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DK Ultimate Human Body	43
Dr Suess ABCs	26
Dr Suess Green Eggs	26
Elmos Preschool	31
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Freddi Fish #2	48
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Little Monster at School	24
Logical Journey of Zoomdinis	29
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Math Blaster Jr	39
Math Rabbit Dlx	22
Math Workshop	22
Mixed up Mother Goose	19
Pajama Sam	49
Playroom	29
Putt Putt Goes to Moon win/mac	29
Putt Putt Goes to Zoo win/mac	49
Putt Putt Joins Parade win/mac	29
Reader Rabbit 2 Dlx	44
Reader Rabbit 3 Dlx	44
Reader Rabbit's Reading Lib 1	22
Reading Blaser Jr	34
Reading Blaster	34
Reading Galaxy	29
Science Blaster Jr	34
Sheila Rae the Brave	24
Simfarm	24
Simtown	24
Spell It 3	34
Spellbound	16
Thinking Things 1	24
Tonka Construction	35
Tortoise & Hare	24
Treasure Galaxy	21
Where in world Carmen jr	29
Word Blaster	34
World Atlas,MavisTyp,Chess	19

REFERENCE

American Heritage Talk Dic	22
Better Homes Cooking	19
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Chinese Dictionary	24
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The fix is in!

OS/2 Ready

Kevin Linfield

With Lotus and MGI waiting frantically on the side, IBM has released the first collection of fixes for OS/2 Warp 4.0.

Since FixPak 1 was just made available as I write this (the end of February), I have not had time to download and install it myself. Initial reactions from other users have been positive overall. It fixes many of the small annoyances (like allowing you to change your default image viewer), but a few users claim that it breaks removable drive support (such as Iomega's ZIP drive).

FixPak 1 can be found on IBM's software server (ftp.software.ibm.com) in the /ps/products/os2/fixes/v4warp/english-us/xr_m001 directory.

Upgrading woes

With the release of Merlin, my home computer system was becoming quite taxed. We are way past the point of a 486 DX/66 with 16 MB of RAM being state of the art. But before I rant about new hardware choices, let me state that I still think 486s (and yes, even 386s) still have their place. If all you do is word processing and maybe a little modeming, don't believe the hype about upgrading your system—it probably won't be worth it to you.

For me, I need to review the latest and greatest and I found that my system limited me when playing games (lots of games!) or running the latest software suites. I decided to focus on what I needed ASAP and chose RAM. Lots of RAM. I now have a more-than-comfortable 64 MB of RAM (nice!) coupled with a used Pentium 90 motherboard. Since I now have PCI slots, I wanted to upgrade as many of my old ISA cards as possible. I switched my video card from an ISA ATI Mach 32 (with 2 MB of VRAM) to a PCI ATI Mach 64 (with 2 MB of DRAM).

With the hardware upgrade, I hoped that I would not have to reinstall any operating systems. In preparation, I had switched all of them back to VGA before I swapped motherboards and video cards.

Once the new hardware was in, OS/2 refused to boot, giving me a TRAP error every time. Oddly enough, the other operating systems worked fine. I ended up reinstalling OS/2 4.0 and am pleased with the new system. I have more than 32 MB of free memory and the machine is significantly more responsive than before.

Of course, all was not well. The Mach 64 video drivers that came with the base operating system would not work. Merlin's video detection chose the wrong card, and even after I corrected it, I was unable to get things working properly. The solution was to use the drivers on the Device Driver CD-ROM and follow instructions carefully. Merlin uses a different video subsystem than Warp 3, so in many cases the old drivers do not work. As for a video speed difference, I don't notice any improvement. Oh well, at least my machine is significantly faster now!

Linfield's List better than ever

My favourite OS/2 freeware page (http://www.to2.org/freeware/) has been enhanced and is now bigger and better then ever. I've added "The Internet's Favourite OS/2 Freeware" page, a collection of freeware OS/2 programs that anyone can suggest. With my goal of producing the biggest and best source of OS/2 freeware, please check it out and e-mail me your suggestions of what freeware you would like to see.

The sun shines on Sundial Systems

Sundial Systems Corporation announced that they have acquired *DBExpert for OS/2*. *DBExpert* is an end-user relational database product that works with several different database formats. It is claimed to provide an environment for building and utilizing personal and departmental database applications using tables, queries, forms and reports—without the need for traditional programming.

DBExpert joins Sundial's *Clearlook* word processor, *Mesa 2* spreadsheet, and *Relish* PIM. I'm guessing that we will see an integrated suite in the near future.

For more information and pricing, check out http://www.sundialsystems.com/ or call (562) 596-5121.

Warp Server information

Newport Technical Services has produced The Warp Server Resource, a collection of information, software, and links to important material useful for those implementing Warp Server on their network. Check it out at http://www.warpserver.com/

Freeware of the Month

With interest rates so low, thousands of renters are realizing that they can own their own house for less than what they pay now. *Mortgage Workbook 1.0 for OS/2* by Canadian Garnet Ulrich lets you see the relationship between your principle, interest rate, payment, and amortization period. Supply any three of the four and it will calculate the final parameter. Free to use, it can be found on the Internet FTP site ftp://hobbes.nmsu.edu/os2/wpsutil/ mortbk10.zip

Kevin Linfield is a consultant and freelance writer. He can be reached via e-mail at linfield@torfree.net ◆

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Xircom/3com PC Card .. $185/228 Pocket LAN adaptor $159
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3Com Remote .....$1100 8 /16 Port Hub $165/265
3Com Switch Hub (12) ..... $2790 APC ups 600/900VA$338/478
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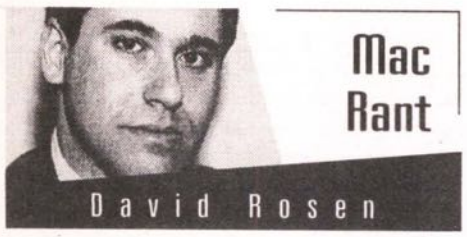
Gil's big shoe



Gil Amelio has finally let another shoe drop—and it's a very big shoe.

In a dramatic bid to reverse its losses, Apple's current boss says the company would cut 4,100 employees, temps, and contractors—nearly a third of its work force—and scale back its Macintosh line of computers and software. Amelio says these changes are necessary to adjust its expenses to rapidly falling revenues.

To pay for the job cuts, Apple says it will take a total of US$250 million in charges over three fiscal quarters, starting with a $155 million charge in the fiscal quarter ending March 31. Apple expects revenue for the second quarter (January 1997 to March 1997) to fall about 22 per cent to $1.6 to $1.7 billion, down from $2.2 billion in the same quarter a year ago.

But there's more bad news. To continue to cut expenses, Apple will drop several product lines and products. Incredibly however, Apple's Newton handheld product line will remain intact for now—probably because nobody else wants it. In a prepared announcement, Amelio said he foresees no more senior management departures, despite the company's continual organizational restructuring.

Bye bye, comrade

Many cynical Apple watchers would agree. After all, since Amelio has conducted a Soviet-style purge of the entire senior management team over the past year, who else is left to go? Worse still, Amelio has brought back Steve Jobs, a man whose petulant and combative leadership style alienated many early Apple employees and whose decisions nearly caused the company to tailspin out of control.

Last December, Apple stunned the high-tech world by buying Jobs' NeXT Software and using its technology as the basis of Apple's new operating system, later named Rhapsody. The US$430 million deal also returned co-founder Apple Steve Jobs, who has gone on record as saying he's more interested in running his computer animation company, Pixar, than in getting involved in the day-to-day operations at Apple.

"We've made the right decision to focus our energies, and these decisions—I am absolutely convinced—will put us on the road back to health, and we'll be looking at a very different situation over the next few quarters," Amelio explained in a prepared statement.

Apple has also reiterated its commitment to deliver Rhapsody in 1998 and to continue to enhance the Mac OS. Certain Mac OS-based technologies, however, such as Open Doc, Cyberdog, Open Transport, Game Sprockets, and Mac OS Development Tools will receive less R&D money for future growth. Mac OS delivery schedules will also be changed. While the Mac OS 8 is still scheduled for introduction in July 1997, Apple plans only one full OS release in mid-1998 (code-named Allegro), and not two full releases as previously announced.

Back on the circuit

Another encouraging sign of life at Apple is the company's exhibiting at important trade shows. First, January's Comdex in Vancouver; then February's Computer Fest in Toronto (which Apple has always avoided); and finally March's Apple Music & Multimedia Show, held in conjunction with the Canadian Music Week. All three shows were well attended and Apple's seminars at Computer Fest were standing-room-only, despite the lousy weather. Kudos go to Neil Buchanan, Linda Grant, Patricia Heath, Bruce Hough, Lani Mercurio, Janine Whalley and all the other Apple people who make these shows happen.

Mac OS gaining market share

Through all the bad news, comes some more good. La Jolla, California-based research firm Computer Intelligence (CI) is reporting that the Mac OS's market share in the US dealer channel rose during the end of last year and continued this trend into January. CI attributes this trend to the success of Mac-clone vendors in taking market share from the PC platform. The study shows the PC platform with 92 per cent market share in November 1996, down to 89 percent in January, 1997. The same study shows the Mac OS with 8 per cent in November, 1996, up to 11 per cent in January, 1997.

Hear distant footsteps or quiet tiptoes? Send your rumours, tips and comments to MacRant@aol.com. Please note that due to the volume of mail, individual questions cannot be answered. ◆

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Yet with all this demand for qualified individuals, there is a still a lack of qualified post-secondary graduates who make computers a career choice. I find this puzzling. If I were back in university now, I'd be blazing a path to the nearest faculty of computer science.

I think part of the problem, is that, until recently, many secondary institutions were content to simply go along their merry way, offering the same diet of courses with little regard for what's happening in the real world. Many students land in university, and are forced to make career decisions with no clue of marketable work skills.

Provinces poised for change

Thankfully, things seem to be coming around—albeit it's a slow shift. Back in February, Ontario's Ministry of Education and Training kicked off a five-year plan to improve the delivery of technology programs. This new visionary Round Table consists of parents, school principals, educators, information-technology leaders, and business execs.

Ontario Education Minister John Snobelen, states: "We want to ensure that the education sector remains in stride with developments and that our students graduate with a high degree of computer literacy." Let's hope the five-year plan includes a concise to-do list and timeline and not merely endless political rhetoric.

British Columbia has also committed to better distribution of technology dollars and hardware distribution to its public schools. Most BC high schools are equipped with LANs, while half of their elementary schools are networked. The province's Community Learning Network connects schools to each other via e-mail and online conferencing.

Yet most BC high-school students still spend their time learning keyboarding and word-processing skills. More sophisticated skills, such as spreadsheet use and CD-ROM research or multimedia use are still in the minority.

One of the province's more innovative projects places classroom teachers for short-term placements in high-tech industries. Teachers then return to the classroom with a better understanding of industry-required skills.

Nova Scotia's Ministry of Education and Culture hosts a wide area network called Ednet. This educational gateway connects the province's colleges, public libraries, museums, and public schools. The popular Workplace Experiences program for educators allows a teacher to spend a week in the workplace. Knowledge of current business practices and skill requirements are then shared with colleagues and students.

Pioneering schools

Although provincial education ministries are making forays into improving computer technology exposure and instruction, it's a laborious, committee-intensive process. The fact of the matter is, for the teacher struggling to make ends meet, there's very little curricular guidelines or support in this area. In fact, Ontario's last curricular guideline update in the area of high-school technological studies dates back to the late 1980s.

So what is the pioneering educator to do? Many boards are establishing corporate partnerships. About a year ago, Ontario initiated its Cyber Arts program. Two other Ontario schools run parallel programs that combine skills in computer-based graphics, 3-D animation, industrial design, and special effects.

Cyber Arts partners include Kodak Canada, Silicon Graphics, Alias-Wavefront, Apple Canada, Rogers Cable Systems, Soft Image, the University of Waterloo, and Sheridan College. Staff and students benefit from direct interaction with practicing professionals in cutting-edge industries.

The program's first group of Senior students is currently taking part in a mentorship co-op program. One student is working on a CD-ROM with a multimedia development firm.

Gordon Graydon Secondary School boasts the International Business and Technology Program. Community and education leaders initially identified key skills required for the next century. Problem-solving and teamwork rated high. But they also discovered that employees want graduates who are familiar with a broad range of technologies and who know how to apply technological solutions to workplace challenges. Flexibility in the growing, open international markets was another key requirement.

Gordon Graydon's program is funded by the school system as well as the local business community. The school actively seeks profit-making opportunities to subsidize the need to keep hardware and software current.

A group of Gordon Graydon students exercise their multimedia skills while producing a software package for the region's public-health department. With fewer health officials available to visit high schools, electronic information on AIDS and teenage health issues will be distributed via touch-screen kiosks displayed in school settings. Planning is also underway to market electronic courseware to other school systems.

Today's student needs exposure to and practice with everyday work skills—information access through multimedia tools and networks, analysis of data using spreadsheets and databases, communication through e-mail, content creation using authoring tools, and understanding of the cultural implications of technology.

To accomplish this, educators need current technology and ongoing training. Education budget cuts don't help the cause. So schools are increasingly sprouting entrepreneurial arms to help finance programs and connect with the outside world. This is fine, as long as educational goals remain sound and curriculum is not diluted to absorb corporate agendas.

Sandra Mingail is a computer educator and consultant. Contact her at mingail@idirect.com ◆

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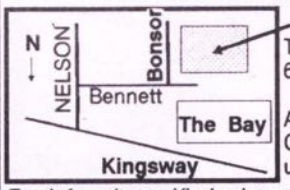

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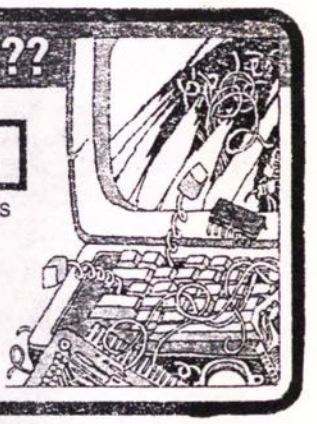

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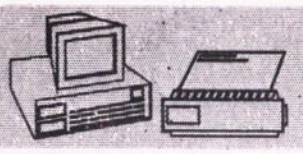

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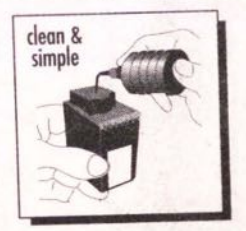

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Chinese

電腦的選購

作者：林啓清 (JimLin)

一、前言

筆者本身經營電腦業，悶悶會有客戶前來詢問有關電腦方面的問題?而客戶最悶問的就是：

1.我應該要買怎樣配備的電腦?
2.我只需要很簡單的功能，目的只是透過Internet講電話?
3.爲什麼透過Internet講電話效果不好?
4.透過Internet可以看到對方的影像嗎?
5.爲什麼我的Internet這麼慢?
6.我的數據機是33.6K，但每次都連到115K?

以下就是筆者最悶使用的回答：

1.這得視您打算用電腦來做什麼而定?不同時期，所購買的電腦配備一定不一樣。目前最悶買的應該是Pentium 166+32MB RAM這樣的電腦。

2.所謂簡單的功能，指的應該是用電腦來打打字，印印東西?

至於透過Internet來進行通訊這件事，不管從那個角度來看，它都不屬於簡單的功能。由於是進行通訊，所以必須透過電腦把我們的語音即時數位化及將資料壓縮起來，然後將此數位資料傳給在彼端的另一方。另外那方，在收到資料後，則進行反向處理。這種即時的語音數位化及資料壓縮，都會使用大量的CPU時間及記憶體，如果您所使用的CPU不夠快或記憶體不夠多，那麼電腦就會自動採用其它的補救措施，不一定會當機，但是速度變慢是可期待的?

如果使用好一點的音效卡，卡上本身就有處理語音數位化的功能，這樣就可以少去叨擾CPU，CPU就會有時間去處理其它的事情，也能對於通訊有一定的幫助?

至於音效卡好不好，一般是很難從價錢或卡的外觀看出來(照悶理講，越貴的卡應該越好)，只有用過才知道?卡本身的語音處理功能不強，可以透過音效卡的驅動程式來加以模擬，而這種模擬就會用到大量的CPU時間。

3.講電話的效果不好，除了像上面第二點所講的原因之外，也與上線的時間有關?上線的時間是屬於當地的連線尖峰時間，效果都會比較不好?

所使用的音效卡本身不支援Full Duplex(全雙工)功能，也會讓您的網際通話遭受到很多困擾?就算您買Creative的音效卡，也不見得就會支援全雙工(很多電腦零售商不知道這件事)?切記!您的音效卡有沒有支援全雙工模態，是您網際通話能不能順利的關鍵之一?

4.當然可以看到影像，而且黑白的效果會比彩色的好?

一樣是老問題，影像這種東西也牽涉到資料壓縮，所以CPU如果負擔太重，對方看到您的影像支離破碎，也是可預期的!

5.這除了跟您上線時間及ISP有關係之外，也許您當時的連線速度有關係?

目前的高速數據機都有自動降速的功能，當電話線路不好時，數據機會自動降速連接。所以，當您的數據機與您的ISP間的連線速率只有4800BPS時，速度當然會慢呀!如果您確定您目前與您的ISP間的連線速度是您數據機的最高速(14.4K的最高速當然是14.4K，28.8K當然就是28.8K囉)，但是速度總覺得很慢，那極有可能是網路塞車或是您的ISP本身的問題囉!至於33.6K的數據機如果連不到33.6K的高速，您也不必太擔心，因爲目前能每次都連到33.6K的人幾乎沒有...;33.6K的數據機能連到31.2K都要很偷笑了!最低的底線是19.2K，低於這個速度，建議您切斷電話線，重新再與您的ISP連一次(一般都會改善)?

6.我只能說您的數據機沒有設定好?

大部份的數據機用戶都不知道怎麼設定數據機(有80%的電腦零售商也不會)?一部設定好的數據機能正確回應目前所連接的速率。如果您的Windows 95告訴您目前數據機與ISP的連接速度是115200、57600、38400，那表示您的數據機沒有設定好?目前最快的數據機是33600(33.6K)，56K(x2)的數據機則還很少見?

二、電腦銷售商的把戲

大部份的人買電腦都是會找便宜的買，或者是殺價?懂一點的人，會比較同一個規格，然後找最便宜的買，不一定需要電腦商的服務?不懂的人，則會亂比價錢，然後亂殺價，最後也不知道電腦裡面裝的是什麼?

在加拿大買東西，如果您沒有原始的發票，不管是退貨或修理都會成問題?如果您跟他買電腦(或零件)的那家公司結束營業，您向他買的那些東西可能瞬時間就變成孤兒，只能禱告那些東西千萬不要故障....;一味的殺價，只會讓自己買到自己認爲自己聰明，但卻與原先不同的東西，當然您自己不會知道....:)

許多電腦商在您買東西前是一付必恭必敬的樣子，等您買東西去找他服務時，愛理不理，理了也不見得能解決您的問題?

差不多每個時間都會許多商品會有促銷，但大部份都是在清庫存品(也就是賣很久還賣不出去的東西)，只有少部份是眞的新東西。也很多促銷品都已經是停產的東西，如果您不慎買了這些東西，而這些東西又恰好有問題，您可能會送修等很久，或者折騰您許多的時間，您才會發現您無法搞定?

所以，找一家能夠信賴的電腦公司反而才是最重要的?要讓一般的讀者瞭解電腦商是怎樣對待可憐的消費者，並不是那麼容易?

以下的電腦比較表，也許可以讓讀者們有一點概念吧?

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3. 凱訊光碟月刊(每期皆附有600MB各類程式)
4. 看圖例學PowerPoint (PowerPoint用戶必備)
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電腦比較表 (Mar. 01, 1997) ☆表示目前已經較少電腦商會這樣做了。

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使用非INTEL(原廠)CPU	由於與INTEL CPU內微碼的些微差異，偶而會有軟體無法執行的問題。
使用75Mhz舊型淘汰主機板☆	此將會導致將來升級的困難。
主機板採用非原廠晶片	有時在增加界面卡時，會有不相容的情形發生。
使用舊式DRAM Cache ☆	會使主機速度變慢。
減少Cache容量(128K)	Cache越少，主機的處理速度越慢。
使用一般慢速顯示卡	使用ISA界面界面卡採16Bit設計。
	在圖型環境(如Windows或OS/2等)下螢幕的反應極爲遲緩。
使用一般雜牌聲霸卡	由於只是Half Duplex(單工)，所以在使用網際網路講電話時，無法同時講話。
使用一般慢速的印表機埠☆	印表機埠的輸出速度較慢
使用一般慢速串列通訊埠☆	使用高速MODEM時，會有資料遺失的錯誤發生。
採用較爲慢速的光碟機	在玩GAME或需要重複讀取光碟片資料時，速度較慢。
使用一般慢速硬碟機	在重複讀取硬碟資料時，速度會較慢。
使用一般廉價外殼	散熱不良，不耐重壓。
不含MODEM或只含慢速MODEM	14.4K傳輸速度較慢，且已屬淘汰機種(28.8K也淘汰在即)。

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完全採用INTEL CPU	由於採用INTEL CPU所以絕對不會有軟體無法執行的問題。
	使用200Mhz以上新型快速主機板將來升級較不容易發生困難。
主機板完全採用原廠晶片	往後在增加界面卡時，不會有不相容的情形發生。
使用最新技術PipelineCache	能增加主機的處理速度。
完全插滿256K或512Cache	Cache越大，主機的處理速度理論上會越快。
使用高速顯示卡	界面採用64Bit設計
使用PCI界面	在圖型環境(如Windows或OS/2等)下螢幕的反應明顯增快。
使用正廠音效卡(全雙工)	由於是全雙工，所以使用網際網路講電話時，可以同時講話。
使用加強型高速印表機埠	印表機埠輸出速度較快，尤其執行像LapLink這類軟體時。
使用加強型高速通訊埠	特別爲使用高速MODEM所設計，能維持資料的正確性。
使用內含256K Cache之光碟機	在玩GAME或需要重複讀取光碟片資料時，能增加讀取速度。
使用內含Cache之高速硬碟機	在重複讀取硬碟資料時，速度會明顯增快。
使用Acer原廠外殼Acer	散熱良好及主機外殼堅硬，能保護電腦內部元件的安全及壽命
使用33.6K高速MODEM	傳輸速度極快，爲目前主流機種。

有的不肖廠商會使用Remark的零件(CPU、RAM)，尤其是CPU上面蓋有風扇，很少有人會把風扇拿開檢查CPU是否Remark(也不見得看得出來)。當您的電腦裡面有Remark的零件，您的電腦可能會三不五時就當機，或者您會發現有些程式無法執行?

很多人認爲Case不重要，只是一個鐵殼罷了?事實上，Case是整部電腦裡佔了極重要的地位，不好的Case也許就是您電腦會不穩定的原凶哦!

三、結語

賠錢生意沒人做，所以當您很容易就達成殺價時，是否應該仔細想想，是否眞的佔到了便宜，還是反而吃虧更大呢?我有一位朋友，在溫哥華當地的一間華人電腦公司買電腦，後來因爲電腦惱出問題，電腦公司也一直無法處理好(大約一個月)，心一橫就想退貨(在加拿大是合法的吧)?

沒想到那家電腦公司竟然開口要客戶支付千餘元(那部電腦才買兩千餘元)才肯接受退貨?仔細想想，租一部電腦每個月的花費也不過五十餘元，就算是租，也不用付千餘元吧?後來經過討價還價，以五百元左右成交(分明是吃人)!我朋友雖然心有不甘，也只能自認倒齒，誰叫他誤上賊船呢?

華人總是抱著息事寧人的態度，有時反而會讓自己吃了不少悶虧?如果您還是抱著買電腦跟買電器一樣的心態，那麼筆者只能祝您好運囉...:-)

如果您有任何批評指教，歡迎與筆者聯絡(jimlin@intergate.bc.ca)。

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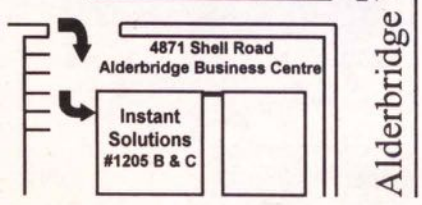

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精品漢筆 GoGo Pen Tablet V5.0

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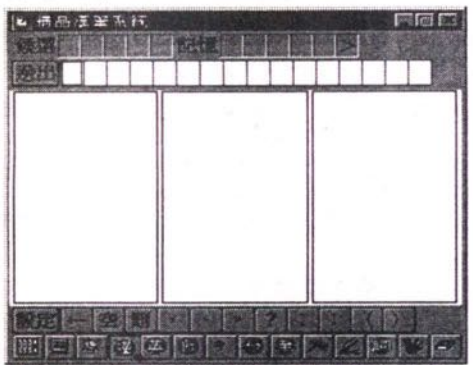
GoGo Pen V5.0 精品漢筆

GoGo Pen is a handwriting recognition system for users with Chinese character knowledge. To those who do not have Chinese knowledge yet, they may not be able to fully utilize this wonderful tool. However, one can always enhance their Chinese characters by using GoGo Pen when they study the language.

最新版 V5.0 功能簡介：
是市面唯一含標準國語及粵語發音之手寫系統。

全新設計的操作介面，功能及使用方法皆一目瞭然，完全符合人性化的需求。使用者可自由增加或刪減手寫面版：

1. 多格手寫視窗：
書寫格數可自定，並可自行改變視窗大小；在小方框裡的書寫範圍有一個、兩個或三個方框可供選擇切換，寫完一個字可以馬上在第二格內寫第二個字，如是者到第三格上；爲方便初用漢筆的朋友，書寫文字時留在方框內，所以不會誤觸。
漢筆更可提供詞庫聯想及記憶聯想。可針對一些常用的詞句做整句輸入，節省輸入的時間。使用者可自行收改，新曾，刪徐詞句等，可增加數千個定詞庫。

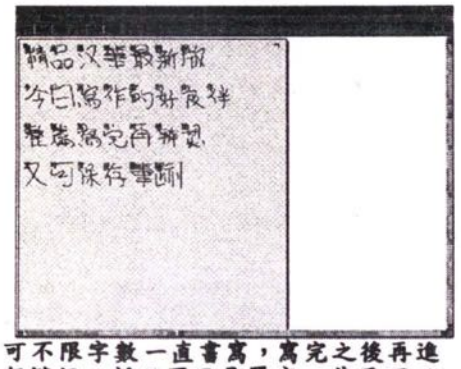


同時使用者可調整筆跡顯示的速度和保存個人筆跡模式。在多格書寫區內可儲存最多９９個字。

Free Write 自由書寫

2. 全螢幕書寫：
書寫範圍在整個螢幕上，書寫文字不會受到範圍限制，也不會有書寫盤底蓋到畫面的問題。提供全螢幕多格書寫，使用者可自由書寫，不受書寫區限制。

3. 自由書寫：
提供全螢幕自動切字功能，使用者可以整句寫完，再一起辨認。



可不限字數一直書寫，寫完之後再進行辨認，所以不只是單字、甚至可以整篇辨認，手跡原稿可以儲存及列印，而且原稿也可以加入圖形。

漢筆直接辨認中文繁體、簡體、草字、俗體字等、日文平假、片假字、辨識速度快，不用分段辨識。除了提供中文字外，本系統亦提供英文大小寫、數字、鍵盤符號等辨識功能。
精品漢筆的手寫筆可同時與滑鼠並存使用，以方便用者於 Windows 中的各種操作。

用筆者可用簡易的符號或圖形來代表一個字或一串字。

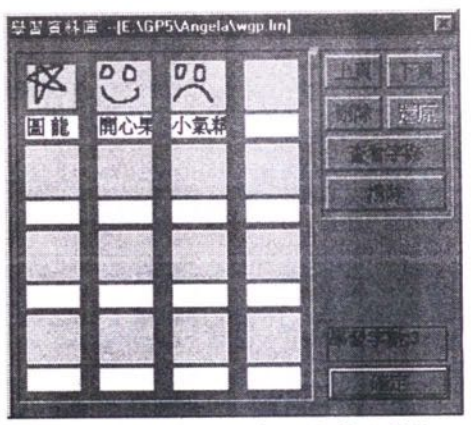
Information provided by Angela Yiu of Instant Solutions' Interactive Learning Lab

多媒体自學教室

(E-mail: isolutions@Lynx .bc.ca)

Personalized Macros 自制私用符號

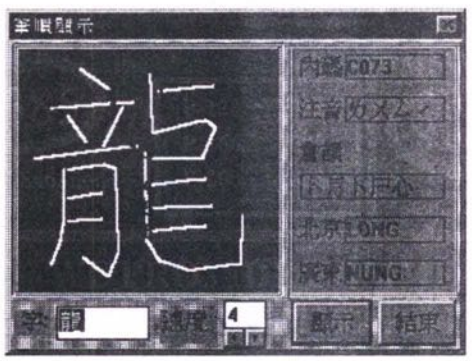
此功能的使用，通常發生在造新字和私人的專用詞庫。



漢筆提供筆跡簽名程式，讓簽名直接送到應用軟件上。

漢筆手寫系統提供符號鍵盤，可直接使用鍵盤上的各種符號。

粵票筆順教學程式（中華字坊）：
９７中華工具坊內含「標準楷書」的互動式多媒體中文文字教學軟體。有助小朋友們學寫中文字、大朋友們學併音和倉頡等輸入法。一邊一邊發出聲音，國語或粵音任擇。



Systems Compatible with GoGo Pen V5.0:

精品漢筆可支援繁簡中、英文 Windows 3.1/95 + 雙橋 TwinBridge、國龍 Asian Dragon Writer 、中文之星 ChineseStar 、倚天 DOS 、國喬 DOS 、CCDOS 、 UCDOS 、RichWin 北大方正等中文軟件系統。

Free Features 精品漢筆最佳拍擋

手寫電子郵件(搶先版)：可直接用精品漢筆手寫辨識系統在 E-mail（電子郵件）上書寫收、發信件。

- **雙橋 Asian Viewer 亞洲窗：可於網路上直接讀取中文(繁、簡體)、日文、韓文等亞洲語文，領先掌界潮流。**
- **雙橋視窗中文伙伴(實用版)：從英文視窗跨越中文繁簡體最簡便的介面，可直接閱讀用大陸碼的電子郵件 E-mail**
- **雙橋視窗日文伙伴(實用版)：從中英文視窗結合日文最佳解決方案，也可以在視窗內透過直接和日本網際網路連線，完全無障礙。**
- **中華字坊：粵票筆順教學，內含多個常用字標準楷書筆劃教學、造詞、國粵語併音。**
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System Requirement 系統需求：

DOS 版：PC 386 Compatible or above
WIN 版：PC 486 Compatible or above
10 MB Hard disk space
2 MB RAM (minimum)
DOS 3.3 and above
Windows 3.1 or 95

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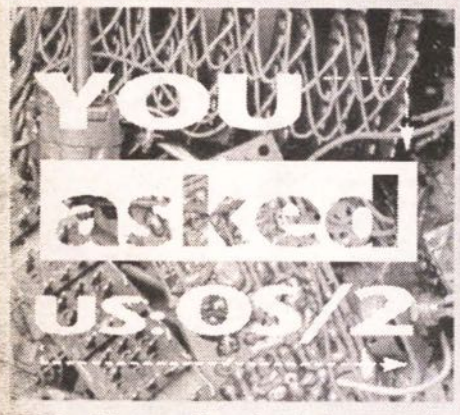
AOL browser gets cold feet



Q I have a client that insists on using AOL (sigh), but I can not get the AOL browser to work. All the other parts to the AOL suite work fine. The browser will start and somewhere in loading the first or second page it will freeze the entire computer, requiring a cold boot. The system is a P166, 32 MB RAM, Warp V3 with FP26.

Any ideas?

Thanks, Bart

A *Kevin Linfield responds: Not having used AOL, I can't be sure what the problem is, but I do know that you can use* Netscape Navigator *with AOL's TCP/IP. Once you are connected to AOL, simply run the OS/2 (or Windows) version of* Netscape. *You could also try it on a computer that doesn't have Fixpak 26.*

Works harder?

Q With respect to *IBM Works* for Warp 3, was there an upgrade (i.e., grammar checker or thesaurus)?

John

A *Kevin Linfield responds: There is still no grammar checker for the* IBM Works *word processor, but there has always been a thesaurus. When running the word processor, pull down the Document menu and select Synonyms (or press shift-F7). The version that came with Warp 3 has been upgraded to version 2.1, which you can get from the Internet FTP site hobbes.nmsu.edu in the /os2/patches directory. Note that OS/2 Warp 4.0 includes an updated* IBM Works v 3.0.

Roll up rolled away?

Q You mentioned a while ago about an undocumented feature to allow the rollup button in PM windows in Warp 4, but I can't remember the syntax. Could you refresh my memory?

Jonathan

A *Kevin Linfield responds: The rollup feature was present in the beta version of OS/2 4.0 (Merlin), but for whatever reason, IBM removed it from the final version. You can get the same feature from X-it, a shareware WPS enhancer located on Hobbes.*

E-mail curiosity

Q I enjoy reading your OS/2 articles and value them as a rare source of good OS/2 information. I wanted to get your quick recommendations for e-mail programs. Since getting on the Internet, I have been using the original *Web Explorer* and *Ultimail* that came with OS/2 Warp. I recently installed *Netscape Navigator 2.02* and started using that mail program for e-mail. I found it very awkward and buggy relative to *Ultimail* (I currently only have 8 MB RAM). The *Navigator* browser is good, but I have decided to stick with *Ultimail* for e-mail. I was wondering if I am missing something. Is there a *Eudora* for OS/2?

Thanks in advance for your help, Ed

A *Kevin Linfield responds: Running* Netscape *with less than 16 MB of RAM is not advisable, but I personally have found its mailer to be quite stable and easy to use. You don't mention what fixpak for OS/2 you have, but you might want to install Fixpak 26 to make sure your system is up to the most current level. As for mailing programs, the best PM mailer is (in my opinion)* Mail Reader/2. *It is shareware, and you can download a copy from Hobbes. Another popular choice is* PMMail *(also shareware) and I'm sure that you will find both of these significantly better than* Ultimail. *And no, there is no* Eudora *for OS/2.*

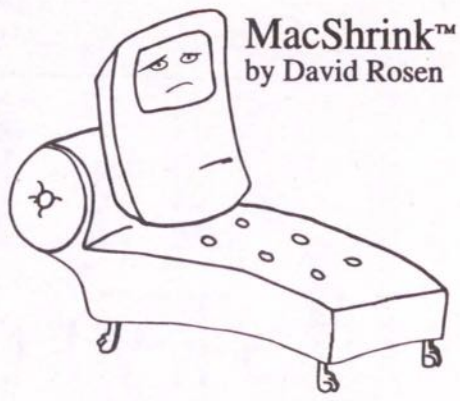
CD won't speak up

Q I was wondering if you will be able to help me solve the following problem: I recently installed OS/2 Warp 4 on a Cyrix 686-150+ machine. Everything seems to be okay except I am unable to get sound when playing music CDs through the multimedia folder of OS/2. All other folders that utilize sound are working fine, it is just the CD-player that doesn't work. I reinstalled OS/2 a couple of times, but still have this problem. Thank you in advance.

Robert

A *Kevin Linfield responds: First and foremost, is your hardware set-up correctly? Can you plug a pair of headphones in the stereo jack on your CD player and listen to it there? Did you connect the output of your CD player into the audio in-port of your sound card? In most cases, this is the problem. If you can play music CDs under other operating systems, then you should try another CD player for OS/2.* CD-in-a-Box *is freeware and it is the one I use and highly recommend. It is available from my freeware page (http://www.to2.org/freeware/)*

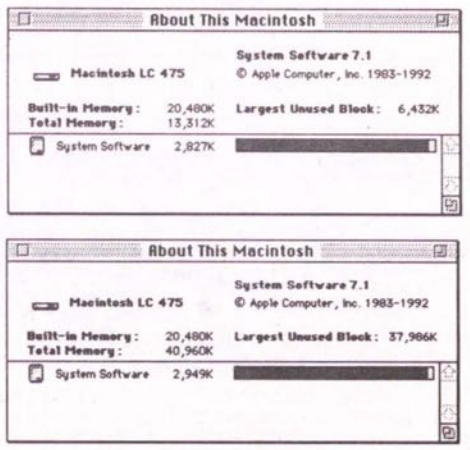
Kevin Linfield is a consultant and freelance writer. he can be reached via e-mail at linfield@torfree.net ◆



MacShrink™
by David Rosen

RAM Doubler paradox

Q Dear Doctor: I recently upgraded the memory in my Mac 475. Before the upgrade, I had 8 MB of physical RAM and 16 MB of total RAM (since I was using RAM Doubler). After upgrading from 8 MB to 20 MB physical RAM, the Mac reported to me that I had 20 MB of physical RAM but only 13 MB in total RAM! What's even more bizarre is that when I took RAM Doubler out of my System Folder and restarted my Mac, I gained back the missing 7 MB of RAM (my system reported that I now had the correct 20 MB of RAM). What's happening? Does RAM Doubler only work with small amounts of RAM or is there a problem with my machine?



Signed: Emil, via an ISP.

A *Dear Emil: RAM Doubler uses a complex memory mapping algorithm to figure out how to run more applications with the available RAM, essentially fooling the Mac into thinking it has more memory. The product works best when you're launching multiple, relatively small applications that don't use lots of memory (such as* MacWrite Pro *and other word processors). RAM Doubler isn't as helpful running applications that require large amounts of RAM (such as* Adobe Photoshop *and other graphic manipulation programs).*

In your case, the problem is easily solved. For RAM Doubler to work with additional memory, you'll need to turn on 32-bit addressing. By doing this, your Mac will be able to recognize the additional RAM properly and RAM Doubler will work as well. Oh, there's one more thing you should know about your Mac. A few really old versions of software applications might not work under 32-bit addressing, so you might have to upgrade these programs to newer versions.

The Doctor.

Getting on the Apple Menu

Q Dear Doctor: How can I get things into the Apple Menu?

Signed: Vicki, via an ISP.

A *Dear Vicki: The Apple Menu appears under the Apple logo and is located in the top left hand corner of the Finder's menu bar. As most Mac owners know, the Apple Menu gives you quick access to all the items that are stored in the Apple Menu Folder. Anything you place in the Apple Menu Folder—whether it's a file, program, or disk icon—becomes immediately available on the Apple Menu.*

Simply click on the item you want to place in the Apple Menu. Next, choose "Make Alias" from the File menu. After a second or two, your Mac should generate an alias (essentially, a pointer to the item). The alias will have the name of the original item with the word "alias" tacked on. You'll also probably notice the name of the alias is in italics; this tells you that the new icon is simply an alias to the file and not the file itself. Drag the alias into the Apple Menu Folder (you'll have to open up the Apple folder itself to get to the Apple Menu Folder). In a few moments, you'll see your new item in the Apple Menu.

Advanced tip: if you're using the Apple Menu often, you'll probably recognize that Apple made it a bit tedious to add or remove lots of items using the above procedure. Here's a tip that will help.

Open the System Folder and find the Apple Menu Folder and select it. Then create an alias for the folder by selecting "Make Alias" from the File menu.

When the "Alias of Apple Menu Folder" appears in the file list, simply drag it out to the desktop in a convenient place. You may want to rename the alias to something more appropriate like "Place/Remove items in Apple Menu." When you want to add an item to the Apple Menu, just drag the icon of the file, folder, or program on top of the alias you created. When you want to remove something from the Apple Menu, just double click on the alias. The alias will show the contents of the Apple Menu and you can then drag the item you don't want into the trash. It will disappear from your Apple Menu in a few moments.

The Doctor.

You can reach MacShrink directly by sending your message to MacShrink@aol.com. Your last name and e-mail address will not be printed. Please note that due to the volume of mail, individual questions cannot be answered. All questions become the property of MacShrink and David Rosen ◆

Computer theft skyrockets

• • By CHRISTOPHER GULY • •

In the last 18 months, police in Eastern Ontario reported companies took a $45 million loss as a result of stolen computer equipment.

Staff Sgt. Lance Valcour, who heads the Ottawa-Carleton Regional Police Services' break-and-enter squad, says that computer theft is one of the fastest growing crimes in Canada.

"It didn't exist a few years ago, but it's just recently exploded." Valcour says that's one of the reasons why Ottawa police established Canada's first Computer Component Theft Team. Valcour and another Ottawa-Carleton Regional Police officer will work with an officer from the RCMP on the new cyber-team.

Recent statistics indicate that Eastern Ontario is not the only region in Canada hit hard by computer theft. Across the country, police estimate that about $1 billion worth of computer components is stolen every year.

Watch your head

"Primarily, what's taken are memory boards and full computers," says Valcour. "The rest is thrown out the window."

Some of the areas most affected are the York and Peel regions of Toronto; Burnaby and Richmond in BC's Lower Mainland; and Saint John, New Brunswick, which is the hub of several call centres.

"This billion dollars worth of stolen equipment is just the tip of the iceberg," says Valcour. "If you have a computer worth $5,000, you could have $100 million worth of data on it."

MaryLu Korkuch, executive director of the Warren, New Jersey-based Technology Theft Prevention Foundation, recently told an Ottawa seminar on protecting electronic components that they represent the number one item on thieves' wish lists.

"Computer components retain 50 per cent of their value once they're stolen, compared with the average of 10 per cent," she said.

Korkuch, whose organization represents electronics firms, law enforcement agencies and insurance companies in the United States, says that computer theft is low-risk and high-gain.

"If you were stopped by a law-enforcement officer, what would you rather have on you—an ounce of cocaine or a Pentium chip? Both will get you about the same amount of money. But one will end you up in jail, the other will not."

Sock it to me

Tom Cornwell, vice president of worldwide electronics underwriting for Chubb Insurance Co., also based in Warren, says that cyber thieves need only do little to get away with a lot. "You can stuff a chip or a component into your pants or socks, and walk away $50,000 richer," he says.

Valcour says that offenders are typically young and sophisticated. Sometimes, they will take their cache of computer equipment to a "mom-and-pop" store and resell it. Or, they will be part of an organized crime network that uses computer components as cash to buy drugs.

Once cyber-thieves hit the grey market to sell their stolen goods, would-be buyers rarely think twice.

"Let's say you have a university student who is trying to do a university project on a

continued on page 68

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The Usenet and its newsgroups

• • By DAVID ROSEN • •

While the World Wide Web is a relatively recent phenomenon, the Usenet and its newsgroups are veterans of the Internet. Don't worry if you've never read a single newsgroup message before. By the time you've finished this article, you'll be reading newsgroups like a seasoned professional. Not only is navigating the Usenet easy, but reading its newsgroups can be fun and informative.

Before we begin our adventure this time, you should know I've included a brief glossary of newsgroup terms in a sidebar to this article. Other sidebars include a helpful guide to newsgroup netiquette as well as a list of interesting newsgroups to visit. Ready? Okay, let's start exploring!

What's in a name?

Newsgroups are simply electronic discussion groups on particular subjects. The Usenet is the collection of these newsgroups.

Imagine for a moment going to a large party at a friend's house and looking around the room. You might see a small group of doctors talking about health care, other folks might be talking about the upcoming baseball season, and a third group might be chatting about the stock market (or anything else). Newsgroups are just like these small talking circles at your party, with a few important differences.

First, there are literally *thousands* of newsgroups discussing just about everything, from "anarchy" to "zoology" and everything in between. Second, newsgroup discussions take place in a virtual room, with contributions coming from around the world. Third, newsgroup discussions happen over time, so you don't get the immediacy of a traditional conversation.

Newsgroup names usually reflect their focus. For example, the newsgroup "biz.jobs.offered" contains discussions about new jobs that employers have posted (and need filled). An important part of the Usenet culture is to respect the focus of the particular newsgroup and not post messages to groups that aren't related to your topic. More about this later.

Who can join the party?

You, of course. All you need is access to the Internet and a newsgroup reader (software that your provider gives or sells to you). You select specific newsgroups from a number of categories, or "hierarchies," to place in your private newsgroup list. You can add to or subtract from this list as your interests change. You can just read newsgroups that interest you or you can participate in the discussion by posting messages of your own. When you post a Newsgroup message, readers around the world will be able to read and respond to it—so think carefully before you post!

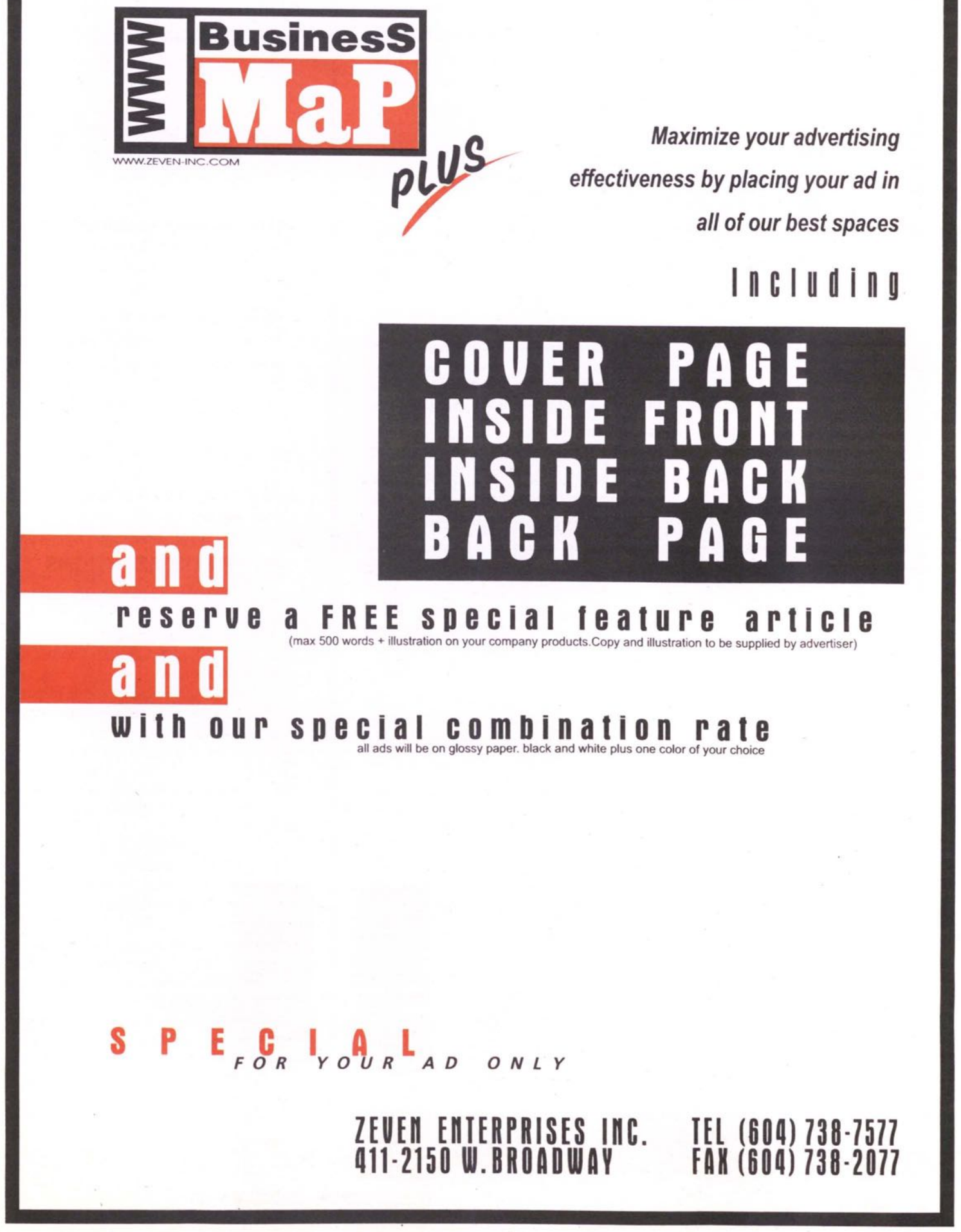
Each newsgroup consists of a list of messages posted to that group, along with the name of the person who posted each message. You can read a particular message in the newsgroup by clicking on it and selecting "read." You can also reply to it if you think you have something to add to the debate. Most newsgroup readers let you send private mail (back to the original sender) and public mail (posting to the entire newsgroup). Remember: if you choose to reply publicly to the message, your message in turn will be read (and possibly commented upon) by others who read the group.

The truth is out there...or is it?

With millions of messages, newsgroups can be a tremendous source of information. But they can also be a tremendous source of *mis*-information, since everybody with an opinion and the ability to type can post their thoughts. Your chances of getting factual information increase in a moderated newsgroup (see the sidebar), but the vast majority of newsgroups are unmoderated. Sometimes the free advice you get from a newsgroup can be very valuable; other times the information can be worth exactly what you paid for it.

There's also fraud. For example, a few people have been caught hyping their companies (and their stock) on the Usenet. They sign on as someone else and post "great" stock tips by supposedly satisfied investors in newsgroups. Other unscrupulous people have posted thousands of messages to newsgroups they don't like, effectively blocking these newsgroups from being read by others.

Some last words before you begin your adventure. Veteran newsgroup folks always suggest you get the lay of the land and "lurk" in the background (see the sidebar) before you post. With well over 15,000 public newsgroups, you're sure to find some funny, informative, and thought-provoking groups out in the Usenet. I've included a few of these in the sidebar. Happy exploring! ◆



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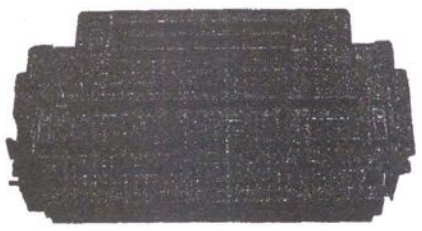

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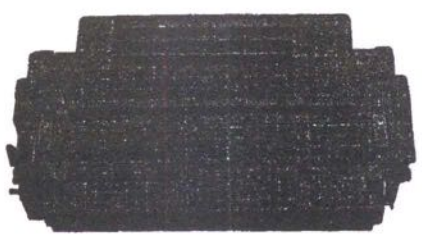

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Bernie Jansen

http://www.interlog.com/~attar01/j-hunt/index.html
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http://www.parlez.com/
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Lauren Blankstein

http://www.lungusa.org/hollywood/
I am writing to announce the launch of the American Lung Association's "Thumbs Up! Thumbs Down!" Web site. This Web site allows users to rate Oscar-nominees according to their depiction of tobacco use.

http://www.ultranet.ca/habdas/
Digital photography page from an instructor from Vancouver, BC. Links include drivers, software updates, photography, education, Vancouver, and business.

Mark Habdas

http://www.geocities.com/athens/2928/
The Poetry Pond is one of the largest online poetry forums. This page features poetry from mainly unpublished poets. Poetry submissions are welcome. If you are looking for some good poetry, then this is the place to visit.

Stephen C. Fuller ◆

Compter theft skyrockets ...

continued from page 66

286," explains Valcour. "For $300 he can get a colour Pentium notebook and will say, 'Yes.'"

Ottawa's new computer crimes unit is modeled after similar units in the California cities Sacramento and San Jose, as well as Austin, Texas. Established in 1988, San Jose's high-tech unit was the first in the United States.

The FBI has also created a unit to patrol the Silicon Valley's 4,100 high-tech companies, and it appears to be effective in combatting computer theft. According to the FBI, the number of armed robberies involving computer components has decreased from 106 between 1994 and 1995, to less than 5 last year.

As a result, cyber-thieves have had to look elsewhere, and such Canadian centres as Ottawa, often referred to as Silicon Valley North with its 700 high-tech firms, has been an easy target.

"Thieves go where the money is," says Cornwell. "John Dillinger was once asked why he robbed banks. 'Because that's where the money is,' he said."

Between 1992 and 1993, Chubb reported US$3 million worth of stolen computer components in Canada and the United States. That figure has since quadrupled and doesn't include internal theft, which Cornwell estimates accounts for almost three-quarters of all computer crimes. This can involve employees directly stealing or feeding information to a thief on the outside. It can also be an independent contractor or someone posing as an employee, explains Korkuch.

"Background checks are not routinely done at a lot of companies," she says. "So a bad guy can falsify his employment application and walk right through the door."

Richard Firth, senior loss-control representative for Chubb Insurance Company of Canada, says that although his 30th-storey office has never been hit, another office in the building has.

Nice suit

"People came in dressed in suits and carrying briefcases, looking very official, picked up a laptop and walked out," he says.

Losses for companies don't end with stolen computers or components, says Cornwell. Insurance policies only cover hardware and software products, but not the information stored on them.

"There might be valuable research-and-development data or a customer list that could be worth $200,000 or $2 million to a company," he says. "Of course, a pricing list or customer list will only be a loss to a company if it gets into the hands of a competitor. But I heard of a small consulting firm that had 200 customers and lost its one and only list."

With specialized computer thieves lurking around, Firth says equipment security has to focus on two fronts. "Never put it beyond your competitors that they will steal what they want," he explains. "You have to consider that the competition wants what you have and then consider what the crook would want." ◆

Downloadable diversions

It's no secret there are thousands of great commercial game demos littering the Web. Large companies, such as Sierra or Activision, offer them for free so you can get a taste of what the full retail version is like, but often the most addictive games are the lesser-known shareware, freeware, and pre-release alphas and betas. Let's look at a few of these.

• • By MARC SALTZMAN • •

Q-Bob

Many of us Generation Xers have a soft spot for classic arcade favourites from the early to mid-eighties. There are some excellent PC clones, including versions of *Pacman*, *Donkey Kong*, and *Centipede*.

Nostalgic fans of *Q-Bert*, however, had only an adequate version to play after its uneventful debut almost two years ago. Thanks to MoonRock Software, a far better Windows 3.1 and 95 version has just been released, with a few extra neat features. *Q-Bob* (version 1.2) plays similar to the pyramid-hopping, long-nosed creature we grew to love, but has added new music and sound effects, cute intermissions, high-quality 256-colour graphics, a posting board for high scores on the Net, and the ability for one to four gamers to play a single round on the same PC! Navigate *Q-Bob* around the squares to advance to the next level, and avoid the deadly obstacles. You can sample a number of levels for free (with multiple skill settings), but you'll probably want to cough up the US$15 to get a registration code to unlock the full game. Hop on over and download this fun diversion.

Redneck Rampage

Players of the testosterone-driven *Duke Nukem 3D* must have a good sense of humour, by the very nature of the game. If you enjoy that boisterous first-person perspective shoot-'em-up style of game, then make sure you grab the alpha of *Redneck Rampage*. Using the licensed *Duke* engine, Xatrix/Interplay bring you a unique gaming experience.

Are you ready for this?! Your job here is to blow away aliens (posing as redneck "hicks") so you can help Leonard and Bubba retrieve their stolen prize-winning pig "Bessie." Although this alien business is probably an afterthought to avoid friction from special interest groups, *Redneck Rampage* is a hilarious spoof on the US Deep South. I dare you not to laugh as you hear cliché'd slang such as "Get offa my laaand!" or "Holy Sheeeaat" from overall-wearin', tobacco-spittin', butt-scratchin' rural folk.

Needless to say, this game is for mature audiences only, but I guarantee you'll be the envy of your friends with this hush puppy on your hard drive! Grab it for a howling good time.

Hardwood Solitaire II

As simple as it is, the Solitaire game that comes with Windows has served as an addictive time-waster for years. Many other, similar versions can be found on game sites on the Web, but last year's *Hardwood Solitaire* (Silver Creek Entertainment) rose to the top of the heap for its realistic "cottage" feel.

Now, *Hardwood Solitaire II* boasts more great solitaire gaming, complete with stunning graphics, MIDI music, sounds effects, and a whole slew of new additions. The shareware version (available online) contains not only the classic "Klondike," but also five more games if you register: *Freecell*, *Fourteen Out*, *Pyramid*, *Golf*, and *Four Seasons*. Take a look at this screen shot and you'll see why you shouldn't pass up on this if you are a fan of solo card games!

Until next time, have fun and happy gaming! ◆

info box

Pacman
http://www.microsoft.com/games/arcade2/
Donkey Kong
http://www.champgames.com/download.htm
Centipede
http://cheesy.simplenet.com/cheesy.htm
Q-Bob
http://www.oz.net/moonrock/qbob.html
Redneck Rampage
http://www.interplay.com/games/redneck.html
Hardwood Solitaire II
http://www.silvercrk.com/

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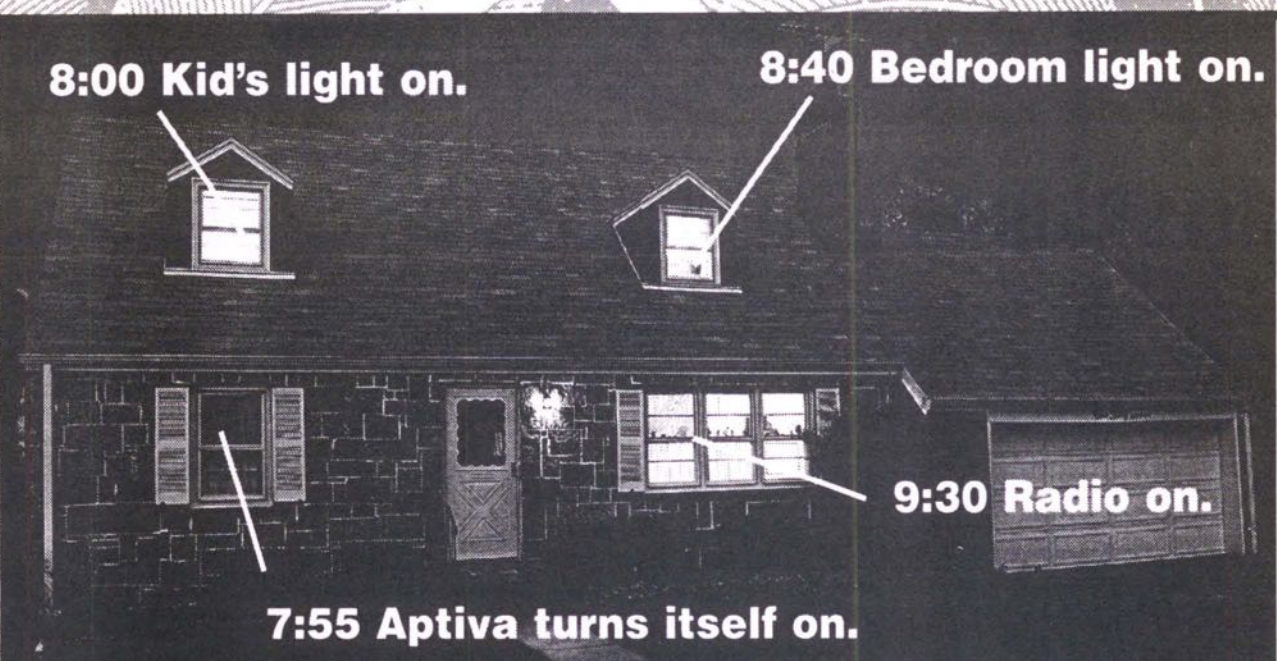

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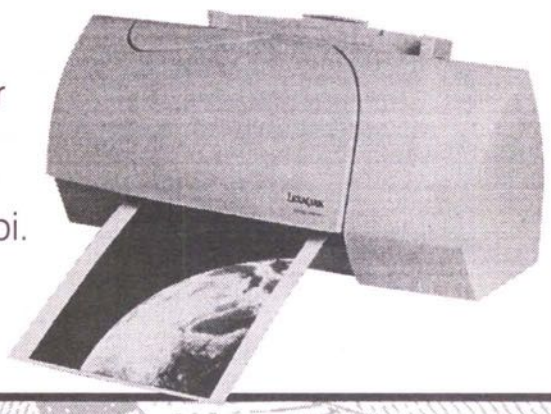

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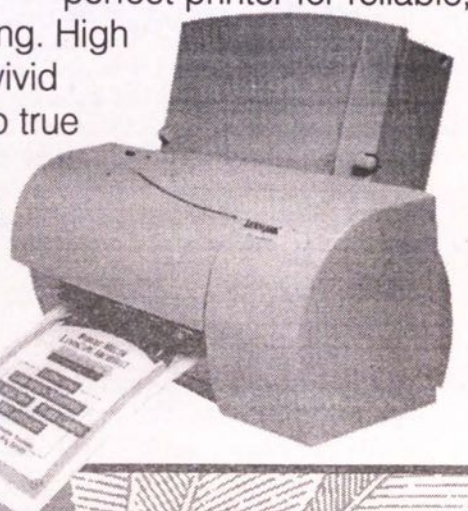

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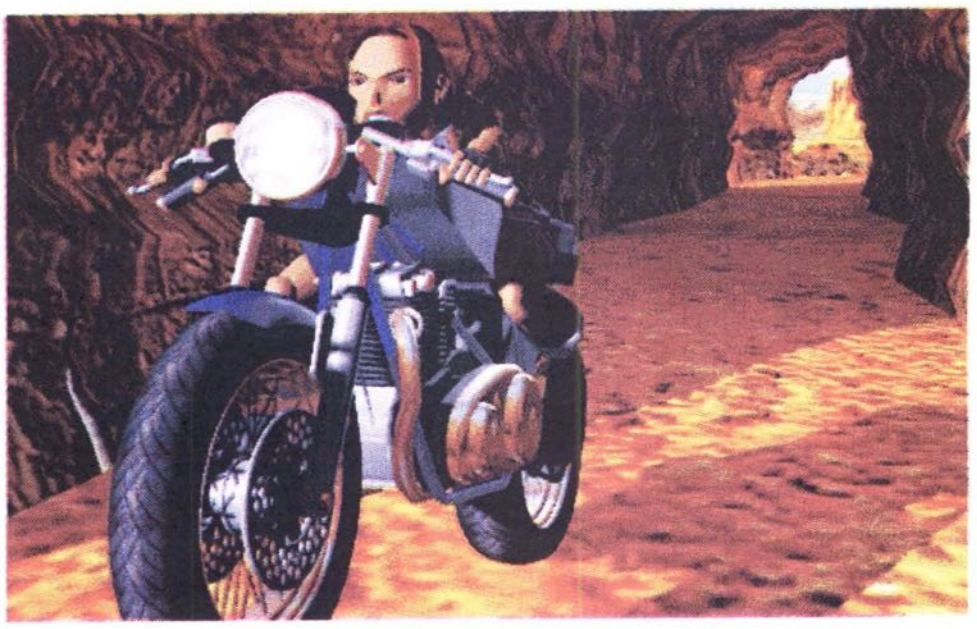
INGRE

Tomb Raiders of the Lost Ark

• • By MARC SALTZMAN • •

PC action fans now have a new gun-wielding icon to look up to. No, he's not a six-foot tall macho dude with bulging muscles, one-liners spewing out of the corner of his cigar-stained mouth. In fact, he's not a he at all. The new name in computer-game heroism is none other than Lara Croft, and she stars in one of the most successful multi-platform hits of recent gaming history: *Tomb Raider*.

The lack of female protagonists in computer games is common knowledge, and since more than 85 per cent of games sold in North America are to males, this is demographically justifiable. There have been a few exceptions in the adventure-game genre, such as Sierra's *Phantasmagoria*, and one of the first PC titles that gave you a choice between playing a man or a woman: I-Motion's 1992 hit *Alone in the Dark*. We have scarcely seen a female presence in the action-game category, though.



Indy-pendent female

Still, what makes Eidos' *Tomb Raider* a fascinating Indiana Jones-style ride is not just the fact the main character is a woman, but that it's a twist on the first-person, 3D genre that combines jaw-droppingly gorgeous graphics, smooth animation, fast-paced action, and skillful puzzle-solving—with an interesting storyline to tie it all together.

Bagging a 12-foot tall Yeti obviously isn't enough to satiate Lara Croft's adventurous cravings, so she decides to accept an expedition from a wealthy businesswoman to travel the mountains in Peru, and recover a mysterious artifact from the tomb of Qualopec—strictly for "sport," of course. And so begins Lara's journey through 15 massive environments within four lost civilizations: the Incan city of Vilcabamba, the ancient ruins of Greece, a forgotten Egyptian empire, and long-lost Atlantis.

Controlling Lara's impressive athletic abilities and quick reflexes becomes second nature after a while: somersaults, long jumps, backflips, diving and swimming, scaling walls, and shimmying across ledges. If this sounds like a lot to learn, worry not—*Tomb Raider* comes equipped with a full training facility in Lara's own mansion before you tackle the lost tombs.

The controls may be easy to navigate, but there are many fierce, life-threatening obstacles set out to make your expedition difficult, including alligators, bears, wolves, giant bats, lions, dinosaurs, hired mercenaries, and more. Also, a handful of secrets are embedded in the game to ensure high replayability and encourage Internet discussions among fans for those interested in unlocking these concealed bonuses.

Paging Mr. Hitchcock

Tomb Raider utilizes a unique camera-angle style engine that allows you to see Lara and her environment at the same time. The "camera" swivels automatically according to your movements (similar to Activision's *Time Commando*) or you may grab hold of the controls yourself. This is something you just have to see to believe. Talk about interactivity!

As an added visual treat, *Tomb Raider* supports the hottest trend in PC gaming—3D accelerator video cards. Simply visit the *Tomb Raider* Web site at http://www.tombraider.com/ and you can download patches and free demos for your 3Dfx Voodoo, Verite 1000, or Matrox Mystique boards (Eidos has announced they will not be producing ones for the Direct 3d, S3 ViRGE, or the ATI "3D Rage").

I have the Intergraph Intense 3D 100 card (formerly the "Reactor"), and have been playing the Rendition Ready version of *Tomb Raider* for a month and a half. Take it from me, the graphics in this enhanced version of the game are nothing short of spectacular. The card allows you to experience high-resolution graphics at increased frame-rates, eliminates texture pixelation, and lets players see distant objects more clearly for an unbelievable smoothed-out effect.

Unfortunately, there are two minor shortcomings in *Tomb Raider*—the absence of multiplayer support and level editors. Granted, in Eidos' defense, the storyline in the game does not allow for more than one player, but perhaps a separate mission that involves two opposing adventurers hired to retrieve the same object would make for fun head-to-head action. What would have also made this game better would be the ability to create and exchange your own personal levels via a free utility available on the CD-ROM or Internet (any hackers reading this?).

All in all, *Tomb Raider* is more than a fun, bug-free diversion—it represents the next stage in PC graphic performance, and may help break down the gender stereotypes found in many electronic interactive-entertainment products (remember the girls in Her Interactive's *Mackenzie & Co.*? Good grief!).

Help Lara kick some butt and let her take you along on an adventure you won't soon forget! ◆

info box

***Tomb Raider*, from Eidos Interactive. PC CD-ROM. $59.99.**

System requirements: Pentium 60 (Pentium 90 recommended), 8 MB RAM, 20 MB free hard-drive space, SVGA VESA local bus graphics card, double-speed CD-ROM drive; most major sound cards, game pads, and joysticks are supported.

***Tomb Raider* is also available for the Sony PlayStation and the Sega Saturn.**

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Be sure to download the newest (March 3, 1997) patch to update *MOO2* to version 1.3. It can be found at http:// www.microprose.com/ corporatedesign/techsupport/ techsupp.html

• • By WILLIAM A. WOOD • •

Master of Orion II: Battle at Antares is the sequel to the wildly successful turn-based strategy game *Master of Orion*. Taking a terrific science-fiction game of galactic exploration and conquest and making it richer and more challenging, Microprose has created an updated hybrid that works.

The concepts and setup of *MOO* have remained. You control a race of creatures (human or otherwise) as it expands from its home planet to spread the banner of your dominion throughout space. You are in charge of colonizing new planets, researching vital scientific advances, designing and building starships, and trading with, spying on, and attacking your neighbours (think *Civilization* in space and you won't be far wrong).

The game has been greatly expanded, however. There can now be more than one habitable planet per star system, for example, and (hooray!) players can customize their race rather than accepting the preset bonuses and penalties. The research element is more complex than in *MOO*, requiring that some hard choices be made.

In addition, various elements of another Microprose product, the excellent strategic fantasy game *Master of Magic*, have been added to the mix. As a result, colony management is much more detailed (and time-consuming, some gamers have grumbled); you now have to construct your colonies building by building, and shuffle your citizens into specialized job categories (the standard food/production/science triangle). Also, you can now hire leaders (AKA heroes in *MOM*) to help both your colonies and your fleets.

These changes and additions mean maintenance of a large empire can become quite a chore. The various windows for controlling the action are well laid out, however, and there are quite a few features to assist the budding tyrant (building queues and an autobuild button, to name but two).

Looking good, your highness

Overall, the game looks great. The SVGA graphics are nice and sharp, and the planetscapes are attractively depicted. The diplomacy and research animations are still clunky, though (the "GNN" broadcast that announces notable galactic events got a much needed facelift, however). The background music is lovely (another *MOM* contribution).

Perhaps the biggest difference in *MOO2* is, as the title forewarns, the genocidal raiders from Antares, who appear at random from hyperspace to, as they explain it, "purify the galaxy." So, besides conquering all of your opponents or winning an election in the Galactic Council, you can now win the game by seeking out and conquering the Antaran homeworld—a Herculean task, to be sure! ◆

info box

***Master of Orion II: Battle at Antares*, from Microprose. DOS/Win95 CD-ROM. $65-$75. System requirements: 486 DX/4 100 MHz PC (Pentium recommended), 8 MB RAM (16 MB under Win95), double-speed CD-ROM drive (faster recommended!), SVGA graphics, 75 MB hard-drive space.**

Our games contest winner

Congratulations to Tim Lin, winner of the *CP!* gaming contest. Tim won a copy of Blizzard's new hit *Diablo* after naming most of the game images featured on February's cover.

The images featured were:

1. *Phantasmagoria* by Sierra
2. *Assassin 2015* by Inscape
3. *Riven* by Cyan
4. *Vampire Diaries* by Her Interactive
5. *Command & Conquer: Red Alert* by Westwood Studios
6. *Shivers* by Sierra
7. *Crusader: No Remorse* by Origin
8. *The Neverhood* by Dreamworks Interactive
9. *Obsidian* by SegaSoft.
10. *Ripper* by Take 2
11. *Myst* by Cyan

Thanks to all who entered— and keep your eyes peeled for future contests.◆

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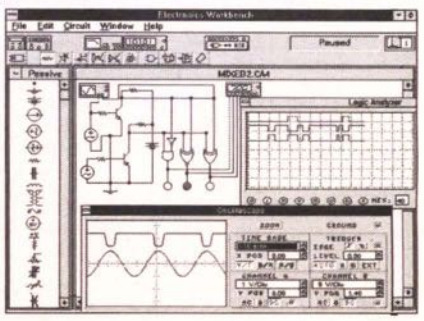

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Ad Index

3D Micro 5
3J Computers 34
Able Computer Rentals 61
ACCA ACCESS 62
ACCO Computer 31
ADDAX Computers 22
Adanced Plus Computers 37
AE Electronics Corp. 17
Alouette Laser Products Inc. ...48
Arete Computers 28
Astel Enterprises Ltd. 49
ATIC Computer 16
Beckman Computer 51
Benchmark Communications Inc. 59
BIS Information 64
Bic Computers 61
Buy & Sell Press 61
CAAST 9
Caron Vetures 35
CE Computer Outlet 53
Cedy Books Ltd 33
Come Entnterprises LTD 26
ComPro Information Inc. 63
Cyberus Online 45
Danby Systems Division 61
Data Recovery 61
Econ 33
Elitech System Ltd. 13
Faronics Technologies Inc. 75
Games Lovers' Library 8
Global Ink 61
Golden Top Computer 30
GPOBOX.COM 36
Half Price Computer Books 48
IBM 70, 71
IC Technology 36
ICI Infowave 19
Imagi.Net 24, 40
Instant Solutions 63
Interaction 47
Internet Direct 76
Internet Gateway 2, 11
Internet Light Speed 18
iSTAR Internet 20
JRS Computers Inc. 44
Lynx Internet 32
M.Y.O.B. 7
Maple Oak Computers 58
Maximum Internet 47
MDG 42
MDI Telecom 29,45
Metro Training Institute 47
Micheal's Computer Shop 40
Microsea Computer Systems ...60
Minitronics of Canada Ltd 61
MultiLink 15
Multimedia Technologies 57
Mycom Computers 51
Nantron Systems Ltd 66
Netlink Computer Inc 74
Nicer Technology Inc. 26
Nomi Computer-Sense 61
NRI/McGraw Hill 12
Nu-Age Computers Plus 3
Oasis Computer Inc. 24
PC Connections 41
PC-Top Computers & Electronics .49
PowerComp 55
Real Identifacation 61
RPC Computer Electronics 69
Sceptre Technologies 25, 52
ScotiaMcleod 64
Shopco Food Services 29
Soho Skyway 61
Strong Computers 51
Subscription Form 72
System-pro Computers 37
Tangent Computers 56
The Newton Store 35
The Word Factory 61
The Works Computer Training ..61
Tricera Computer Center 46
UAC-UP Education Expo Ltd. 33
United Computers 54
Valley Income Tax Services 61
Vancouver Toner Plus 68
Webworks 33
Zappa 38, 39
Zeven Enterprises Ltd. 8, 23,67
ZL Computers 50

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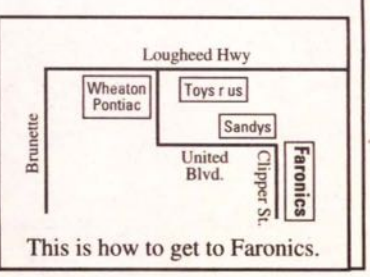

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